COUNTERING DISINFORMATION NARRATIVES AND MAPPING CONSPIRACY THEORIES:

THE CASE OF BIH

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IMPRESSUM

EXECUTIVE SUMMARY

This research shows that about half of the BiH population is mostly undecided about believing conspiracy theories, or they equally agree with some and disagree with other conspiratorial narratives. Demographically, this population consists of slightly **more women than men, it is more middle-aged, non-college educated and more likely to live in rural than in urban areas**.

Almost 30% of the surveyed population consider conspiratorial claims to be plausible or true. A stronger inclination towards such beliefs is found more often in **men, older age groups (over 55), non-college educated and rural populations.**

Less than a quarter of the population rejects such claims. The "non-believers" group tends to be **more male, younger in age (under 34) and more likely to be college-educated and live in urban areas.**

However, these differences are not very prominent and various demographics are present in these three groups in percentages close to those of their representation in the total sample (for example, the gender difference is most pronounced in the "believers" group, but men are overrepresented by about 5% compared to their presence in the total sample and women are underrepresented in the same percentage).

This result, however, does not apply equally to different types of conspiracy theories. False beliefs about the Covid-19 pandemic have gained a considerable stronghold in the society and are believed more than other conspiracy theories. The inclination towards pandemic-related conspiracy theories is omnipresent, with some of the specific conspiracy theories reaching levels of agreement as high as 73%.[1]

Similarly, some demographics show more propensity to believe conspiracy theories of a specific kind (for example, men are much more likely to believe antisemitic conspiracy theories, while older age groups are much less likely to believe conspiratorial claims about Covid-19 vaccines).

False narratives about Covid-19 vaccines have been adopted to a lesser extent than those about the origin, spread and consequences of the pandemic.

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[1] The statement that hospitals have falsely attributed deaths from other causes (all hospital deaths) to Covid-19.

This is demonstrated both in adopted attitudes and health choices, as over 50% of the survey respondents (1,018 total) were vaccinated against Covid-19 in December 2021 (while this is not a satisfying level of immunization, it shows that immunization rates may be higher than suggested by official statistics, which rely upon outdated 2013 census data).

Correlations have been established between belief in conspiracy theories and variables such as trust in institutions, vaccination status and choice of information sources. The unvaccinated population tends to be more inclined than the vaccinated to believing conspiracy theories, have lower trust in institutions (particularly health institutions), gravitate toward online sources of information about vaccines and the pandemic (Facebook being their number one choice), and are more inclined to believe public figures who spread conspiracy theories, than experts who provide fact-based information. Focus groups discussions additionally confirm that health choices such as refusal of vaccination are strongly influenced by such variables.

People who do believe conspiracy theories about Covid-19 vaccines are strongly attached to those beliefs and demonstrate unwillingness to question them. The focus groups discussions, which have included more than 34 participants, point to a conclusion that a window for an effective vaccine information campaign may have closed and a different approach, one that emphasizes specific gains from vaccination which are not necessarily health-related (work, travel, access to public spaces) may be more successful in raising level of immunization in community.

In the interpretation of these results, it is important to keep in mind that the statements used to probe the level of agreement with conspiratorial beliefs were unequivocally false and some conveyed dangerous views like antisemitism, xenophobia and anti-scientific attitudes. While it is worrying that almost half of the population is generally unsure whether these false and potentially radicalizing statements are true, it leaves enough room to think about strategies and policies to build resilience to such narratives and work against their further spread.

Policy makers need to consider different approaches in tackling various levels of the problems identified in this research:

1. On a broader and more systemic level, policies and activities to **increase overall resilience against conspiracy theories and disinformation** should be adopted.

As pointed out by the stakeholders interviewed for this research, as well as relevant literature, a multi-sector approach is crucial in creating such policies, which should be focused on **increasing the level of information literacy in society**.

These policies need to combine knowledge and skills of media literacy, digital literacy, science literacy and similar areas which need to be meaningfully embedded in the education system, adjusted to needs and challenges of the digital information era and broadly promoted throughout the media and public sector.

2. In crisis situations like the current pandemic, the institutions across sectors like health and education need to **adopt targeted policies and activities to prevent acute and widespread disinformation disorders**. Responses to phenomena like antivaccination propaganda, but also other potentially radicalizing ideas and movements, need to be adopted swiftly, be based on scientific knowledge and include input from stakeholders who possess expertise in relevant areas. Expert knowledge is key not just in developing such policies, but also in recognizing the rise of disinformation trends early on, in order for them to be stopped or minimized before going over the mainstream acceptance threshold.

3. In cases where opportunities to "inoculate" the public against dangerous disinformation narratives are missed, which has happened with the Covid-19 pandemic, **containment policies** need to be considered to try to at least influence immediate behavior, if not attitudes and beliefs. As in the previous approaches, these policies should be based on exact research and expert knowledge.

INTRODUCTION
WHY THIS RESEARCH?

Misconceptions are hardest to fight when they are a part of a belief system or "core beliefs" that are embedded in self-identity and/or group identity. In cases of isolated and/or banal misinformation, which do not "attach" to the sense of self, there is no intense resistance to accept facts that differ from what a person initially believed to be true. However, when a piece of misinformation fits in in a more complex system of beliefs, it holds a different weight and it may be difficult or impossible for those who initially believed it to accept the facts, as that poses a threat of dismantling that entire system of beliefs.

The experience of debunking and fighting disinformation has proven this to be true, especially during the pandemic, when such systems of beliefs gained new strength in times of crisis and uncertainty. This warrants a different approach by relevant stakeholders, one that would be more proactive rather than reactive, be based on existing research and empirical evidence where available, and provide additional insight with new research for specific regions and socio-cultural circumstances where decision makers and practitioners in the field of fight against disinformation operate.

We have seen the negative effects of beliefs in conspiracy theories about the pandemic in Bosnia and Herzegovina (BiH) and the Southeast Europe region. However, we are still missing answers that would help explain these phenomena based on empirical data. How pervasive are beliefs in such narratives and how specifically have they affected behavior and health choices of the people? Who did BiH citizens trust to inform them about these issues in the cacophony of information created by the media and social media environment? Are there connections between these and other sets of beliefs based on false information? How do relevant stakeholders see their roles and accountability to provide accurate information about these life-threatening issues?

To answer these questions, we wanted to look into systems of information disorders, like conspiracy theories and complex disinformation narratives, focusing on those which target issues related to the pandemic.

With this research, we want to provide empirical data on the content, scope and pervasiveness of beliefs in conspiracy theories and similar narratives; examine how those beliefs affect real-life choices and behaviors (specifically those related to immunization against Covid-19) and establish relations of such beliefs to other data sets, such as demographic characteristics, information choices, levels of trust in institutions and public actors, proneness to anti-scientific thinking styles, as well as responses of people who believe in such narratives to different approaches in debunking or communicating accurate information about these matters.

We hope that the collection of such data and establishing correlations between them will provide valuable insights into mechanisms driving the "infodemic" and its consequences. Furthermore, we hope that data provided by this research will be used to build short and long-term strategies to tackle these and other similar harmful systems of beliefs and that recommendations drafted in this paper will contribute to creating such policies and strategies.

THEORETICAL BACKGROUND AND EXISTING RESEARCH ON CONSPIRACY THEORIES

Research into conspiracy theories has so far mostly been focused on psychological and social issues behind proneness to accept such beliefs. Due to the complexity of the matter, there is no single definition of a conspiracy theory. Depending on the scope of interest in the matter, different researchers will define the phenomenon with emphasis on different elements. For the purpose of this research, conspiracy theory is defined as a narrative that provides a false or unverifiable description of a phenomenon, event or person, presenting it as a part or result of a malicious covert plan, unsupported by evidence.[2]

According to the 2019 paper "Understanding Conspiracy Theories", in its most simple form, a conspiracy theory would serve as an explanation of an event - political, social or otherwise relevant - according to which there is a conspiracy of more than one actor[3]. The European Commission's website dedicated to fighting disinformation uses a definition of conspiracy theories as "beliefs that certain events or situations are secretly manipulated behind the scenes by powerful forces with negative intent".[4]

As such, they have six things in common: an alleged and secret plot, a group of conspirators, "evidence" that seems to support the conspiracy theory, they falsely suggest that nothing happens by accident and that there are no coincidences, they divide the world into good or bad and they scapegoat people and groups.

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[2] See, for example: Cvjetićanin et al. (2019). (publication). *Disinformation in the Online Sphere: The Case of BiH.* Citizens' Association "Why Not". Accessed February 12, 2022, from https://zastone.ba/app/uploads/2019/05/Disinformation_in_the_online_sphere_The_case_of_BiH_ENG.pdf 89.

[3] Douglas, Karen et al. (2019). "Understanding Conspiracy Theories." *Political Psychology, 40(S1)*, 3-35. https://doi.org/10.1111/pops.12568

[4] *Identifying Conspiracy Theories.* European Commission. European Commission (n.d.). Accessed February 13, from https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/fighting-disinformation/identifying-conspiracy-theories_en

Another trait of conspiracy theories is that the conspirators are not all-powerful, hence they need to be secretive while executing their plans[5]. Historically, the conspiratorial narratives date back to the times of the Roman empire,[6] but they reached a "gilded age" during the Enlightenment period in Europe.[7] Yet before that, one of the most prolific categories of conspiracy theories - the antisemitic one - had its roots in the medieval ages,[8] and continued to live until modern times.

With the emergence of other categories, defined mostly by the targeted actors, the antisemitic conspiracy theories made room for new ones, but never faded out, and in some cases were incorporated into other conspiratorial narratives.

As the age of Enlightenment arrived, secret societies such as Illuminati became subject to conspiratorial accusations.[9] True political conspiracy theories flourished as the volatile twentieth century rolled in.

More precisely, they were used as political tools to legitimize carnage and oppression early into the century.[10] But as the decades went on, a shift toward anti-establishment conspiracy theories became evident.[11] A qualitative change was not observed with the advent of the internet, but a quantitative one was, as the global network proved to be a potent vessel for the spread of conspiratorial narratives.[12]

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[5] Keeley, Brian. (1999). "Of Conspiracy Theories." *Journal of Philosophy, 96(3)*, 109-126. 10.2139/ssrn.1084585

[6] Victoria Emma Pagán, "Conspiracy Theories in the Roman Empire," in *Routledge Handbook of Conspiracy Theories*, eds. Michael Butter and Peter Knight (Routledge, 2021), 535-540

[7] Claus Oberhauser. "Freemasons, Illuminati and Jews: Conspiracy Theories and the French

Revolution," in *Routledge Handbook of Conspiracy Theories,* eds. Michael Butter and Peter Knight (Routledge, 2021), 556.

[8] Jovan Byford, "Conspiracy Theories," in *Key Concepts in the Study of Antisemitism,* eds. Sol Goldberg, Scott Ury and Kalman Weiser (Palgrave Macmillan, 2021), 79-92

[9] Daniel Pipes, *Conspiracy: How the Paranoid Style Flourishes and Where It Comes From*. New York: Touchstone Book, 1999.

[10] Pascal Girard, "Conspiracy Theories in Europe During the Twentieth Century" in *Routledge Handbook of Conspiracy Theories*, eds. Michael Butter and Peter Knight (Routledge, 2021), 572-574.

[11] Girard, "Conspiracy Theories in Europe", 574-5.

[12] Simona Stano, "The Internet and the Spread of Conspiracy Content" in *Routledge Handbook of Conspiracy Theories*, eds. Michael Butter and Peter Knight (Routledge, 2021), 484.

In today's Bosnia and Herzegovina, the prevalence of conspiratorial beliefs is high: recent research[13] shows that as many as 96% of participants believe in at least one conspiracy theory, as defined by the research authors.

Conspiracy theories can be grouped based on different classification criteria, such as their scope. According to the classification by scope, conspiracy theories can be divided into event conspiracies (the conspiracy is thought to be responsible for a limited, discrete set of events), systemic conspiracies (the conspiracy is considered to have broad goals, with the aim of securing control over a country, a region, or the world), and superconspiracies (linking multiple conspiracies in a hierarchical structure).[14] Another basis for classification can be the type of the primary actor, specifically whether they are inside or outside the group.[15]

The most widely used scale measuring the general tendency towards conspiracy beliefs, developed by Brotherton et al. [16] divides conspiracy theories into five conceptually distinct categories based on factor loadings (measuring the concepts that cannot be quantified).

Those are government malfeasance (accusations of routine conspiracies orchestrated by the government), extraterrestrial cover-up (alleged conspiracies to cover up the existence of extraterrestrial life), malevolent global conspiracies (narratives in which a small, powerful group of individuals controls most important events in the world), personal well-being (alleged conspiracies aiming to curb one's liberty and health with actions such as mind control and intentional release of viruses) and the control and suppression of information (by the government, media, scientists and corporations).

According to the 1999 paper "Beliefs in Conspiracies", there is no confirmation that people believe in conspiracy theories because they prefer simple explanations of complex events, contrary to popular belief.[17]

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[13] Vladimir Turjačanin, Srđan Puhalo, and Duška Šain. *Conspiracy theories in Bosnia and Herzegovina.* (Sarajevo: Friedrich-Ebert-Stiftung, 2018). http://library.fes.de/pdf-files/bueros/sarajevo/15006.pdf

[14] Michael Barkun. *A Culture of Conspiracy: Apocalyptic Visions in Contemporary America.* (University of California Press, 2003), 6.

[15] Jesse Walker. *The United States of Paranoia: A Conspiracy Theory.* HarperCollins Publishers, 2013.

[16] Brotherton et al. (2013). "Measuring Belief in Conspiracy Theories: The Generic Conspiracist Beliefs Scale." *Frontiers in Psychology, 4*, 279. https://doi.org/10.3389/fpsyg.2013.00279

[17] Abalakina-Paap, M. Walter G. Stephan, Traci Craig, and W. Larry Gregory. (1999). "Belief in Conspiracies." *Political Psychology, 20*, 637-647. https://doi.org/10.1111/0162-895X.00160

In this paper, researchers used canonical correlation to examine the relationship of 11 individual difference variables to two measures of beliefs in conspiracies and found that beliefs in conspiracy theories are positively correlated with high levels of alienation, powerlessness, hostility and being disadvantaged.

A study that involved 348 residents of southwestern New Jersey (US) has found that those who believe in one conspiracy theory are more likely to subscribe to others.[18] The study concluded that belief in conspiracies was correlated with things like lack of interpersonal trust and insecurity about employment.

However, according to a 2012 paper,[19] different conspiracy theories need not follow a mutually compatible narrative in order for an individual to support them. The authors conducted two studies and found that the more participants in study 1 believed that Princess Diana faked her own death, the more they believed that she was murdered; the more participants in study 2 believed that Osama Bin Laden was already dead when U.S. special forces raided his compound in Pakistan, the more they believed that he is still alive. Hierarchical regression models used in this research showed that mutually incompatible conspiracy theories are positively associated because both are associated with the view that the authorities are engaged in a cover-up. Belief in conspiratorial narratives is thus not necessarily about explaining an event, or multiple events, but has to do with coping mechanisms in situations of disadvantage.

One distinct factor that seems to foster conspiratorial thinking is a low level of confidence in government, which in itself is helped by scandals involving government officials. A high scandal political climate fuels the rise in conspiratorial beliefs (Einstein, Glick 2013). This applies even to conspiracy theories that are not related to the ongoing political scandals, meaning that the general propensity to conspiratorial beliefs will rise in such a climate regardless of the possible conspiracy theories about the specific ongoing scandals. Confidence in the government in Bosnia and Herzegovina remains low, according to recent surveys conducted by the Regional Cooperation Council, which explains the popularity of conspiratorial beliefs throughout the population.[20]

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[18] Goertzel, Ted. (1994). "Belief in Conspiracy Theories." *Political Psychology, 15(4)*, 731-742. https://doi.org/10.2307/3791630

[19] Wood, M. J., Douglas, K. & Sutton, R.M. (2012). "Dead and Alive: Beliefs in Contradictory Conspiracy Theories." *Social Psychological and Personality Science, 3(6)*, https://doi.org/10.1177/1948550611434786

[20] *Balkan Public Barometer.* Regional Cooperation Council. Regional Cooperation Council. (n.d.). Accessed February 13, 2022, from https://www.rcc.int/balkanbarometer/results/2/public

A 2018 research found that the sense of belonging to an ethnic group correlates positively with acceptance of conspiracy theories in Bosnia and Herzegovina. Conversely, the sense of belonging to the broader BiH community and trust in the national-level institutions correlates negatively with the propensity to believe conspiratorial narratives. Confirming previous findings, the researchers established that persons with conservative political beliefs are more likely to subscribe to conspiratorial beliefs. However, in contradiction with similar findings elsewhere, they found that those believing in conspiracy theories tend to be more politically active. The researchers argued that political participation is closely linked to ethnic identity in BiH, which could explain this finding.[21]

In political thinking, conspiracy theories act as a sort of means of identification - co-partisans will be able to "recognize" one another by sharing conspiratorial beliefs, simply because conspiracy theories in this perspective act like any other set of political beliefs. Members of the group are likely to successfully identify a conspiracy theory that favors their group and targets the opposing group (Smallpage, Enders, Uscinski, 2017).

Communicating clearly partisan content, conspiracy theories signal to group members who sent the message, who stands on the opposite side and what the possible threat or harm is. Having this in mind, correcting partisan-linked conspiratorial beliefs would require detaching them from the partisan identity, rather than presenting new information to the individuals subscribing to such beliefs. In the BiH context, in which partisanship is closely related to ethnonational identification, this could mean that the conspiratorial beliefs should be detached from the three dominant ethnopolitical narratives.

A recent paper found that media reporting on issues that conspiracy theories are built around (e.g. reporting on elections) seems to be fueling the belief in them (Edelson, Alduncin, Krewson, Sieja, Uscinski, 2017). BiH has a liberal media environment, ranking 58 out of 180 countries in the world in 2021, according to the media freedom index by Reporters without Borders. Bosnian media have covered the pandemic extensively, including the issues surrounding Covid-19 vaccines. A significant part of this reporting pertained to concerns about vaccination risks, which were sometimes over-emphasized even in the reports of mainstream media in Bosnia and the region.[22]

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[21] Turjačanin et al, "Teorije zavjere."

[22] This was particularly noticeable in relation to the AstraZeneca Covid-19 vaccine, where such reporting occasionally even crossed into spreading misinformation about these perceived or suspected risks. For example, a statement by then Chancellor of Germany Angela Merkel, who expressed confidence in AstraZeneca vaccine, was misquoted as saying that she has "no intention of getting vaccinated with that vaccine" (see: Maida Salkanović, "Angela Merkel i vakcine: Klikbejt hrani

However, if there is a link between the media coverage of vaccination, the hesitancy to get vaccinated and the prevalence of conspiracy theories about vaccines, it would need additional research to identify it.

With the rise of the internet, the media audiences went from being passive consumers of the news content to becoming more active actors who share, comment on and even create content. This "democratization" of online public space has proven to have some advantages; however, the lack of content regulation facilitated the spread of conspiracy theories. In addition to interactivity, this also enabled the audience to easily share the content it creates, making it no longer just a transmitter of conspiracy theories but also its creator.

Recently, social media - places where conspiracy theories are readily available and spread easily thanks to algorithms[23] - started moderating misinformative content to various extents. In turn, this made them less appealing to proponents of conspiracy theories, as social media developed the qualities traditionally associated with the main actors in conspiratorial narratives ("the elite"): powerful, omnipresent and supporting mainstream explanations of current affairs.

Conspiracy theorists thus experience sort of a paradox: they distrust the platforms they depend on to develop and spread their beliefs. This gave birth to a relatively recent phenomenon of platforms whose allure is based on the promise that the posted content will not be "censored", i.e. moderated.[24]

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nepovjerenje prema vakcinama," *Raskrinkavanje*. March 10, 2021.
https://raskrinkavanje.ba/analiza/angela-merkel-i-vakcine-klikbejt-hrani-nepovjerenje-prema-vakcinama (accessed February 15, 2022).).
In other cases, official statements and documents of institutions such as the US Centers for Disease Control about vaccine safety were reported with important information missing, creating an impression that side-effects or unwanted events are more frequent, or more severe than they really were (See: Amar Karađuz, "Manipulacije i činjenice o miokarditisu i perikarditisu poslije imunizacije mRNA vakcinama," *Raskrinkavanje*. July 22, 2021. https://raskrinkavanje.ba/analiza/manipulacije-i-cinjenice-o-miokarditisu-i-perikarditisu-poslije-imunizacije-mrna-vakcinama (accessed February 15, 2022).).

[23] *How the Facebook algorithm works and ways to outsmart it*. Sprout Social. (2021, September 20). Accessed February 12, 2022, from https://sproutsocial.com/insights/facebook-algorithm/

[24] Rogers, R. (2020). Deplatforming: Following extreme internet celebrities to telegram and alternative social media. *European Journal of Communication*, 35(3), 213–229. https://doi.org/10.1177/0267323120922066

FACT-CHECKING AND THE INFODEMIC: BIH AND THE REGION

Fact-checking projects and initiatives have been present in South-East Europe for over a decade in different forms, but the practice has gained significant traction in recent years, most notably with the explosion of disinformation during the Covid-19 pandemic. The most prominent fact-checking outlets in the region are projects of established NGOs that work on strengthening democracy,[25] whose initial projects were concerned mostly with checking political statements.

Their work has later expanded to checking claims published by the media and content on social media. The focus on social networks intensified in 2020, when four fact-checking organizations from the region joined Facebook's third-party fact-checking program.[26]

In May 2020, a network of South-East European fact-checkers was created under the name SEE Check,[27] aiming to provide a more coordinated response to the unprecedented level of disinformation that started circulating in the media and on social media.

These included conspiracy theories about the origin and the "purpose" of the coronavirus, a whole assortment of different claims about cures and treatments for the disease, and numerous falsehoods about the dangerous effects of vaccination which appeared even before any of the Covid-19 vaccines were completed.

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[25] Graves, L., & Cherubini, F. (2016). (publication). *The Rise of Fact-Checking Sites in Europe.* Reuters Institute for the Study of Journalism with the support of Google Digital News Initiative. Accessed February 12, 2022, from https://reutersinstitute.politics.ox.ac.uk/sites/default/files/research/files/The%2520Rise%2520of%2520Fact-Checking%2520Sites%2520in%2520Europe.pdf.

[26] *Wired*. "Four Western Balkans' fact-checking organizations join Facebook's platform against disinformation" August 14, 2020. https://www.wired-gov.net/wg/news.nsf/articles/Four+Western+Balkans+factchecking+organisations+join+Facebooks+platform+against+disinformation+14082020152500?open (accessed February 15, 2022).

[27] The network is comprised of six newsrooms (Raskrinkavanje.ba in Bosnia, Faktograf.hr in Croatia, Raskrinkavanje.me in Montenegro, Fakenews.rs and Raskrikavanje.rs in Serbia, and Razkrinkavanje.si in Slovenia). See more: https://seecheck.org/index.php/about/

A study of disinformation on the Covid-19 pandemic, based on the debunking material produced by the network's members, was published in 2020.[28] It warns that vaccines and vaccination against Covid-19 will most likely be the primary subject of disinformation "campaigns" of online conspiracy theorists and similar "content creators" in 2021.

This prediction has largely come to fruition, as evidenced by a large amount of vaccine misinformation online and low immunization rates, even after vaccines became widely available in all of the countries in the region. The study outlined that turning to the internet for vaccination advice can impact vaccination decisions, warning that:

"If the rate of "production" of disinformation about vaccines continues to increase, it may win the online fight for viewers' attention. If that happens, decisions about an act of immunization, crucial for curbing the tragic life and livelihood loss brought about by the pandemic, will perhaps be decisively influenced by already established anti-vaccine narratives, "descending" from the founding hypothesis of the movement, the false claim of a link between the MMR vaccine and autism, stemming from the discredited pseudo-scientific "research" of Andrew Wakefield. In other words, by a 20 year old piece of disinformation that has been debunked for nearly as long as it has been around. That "butterfly effect" should be on the mind of everyone who deals with disinformation, no matter how small, especially during the time of a global crisis."

[28] Krupalija, Rašid et al. (2020). (publication). *Disinformation During Covid-19 Pandemic*, edited by Tijana Cvjetićanin and Adnan Huskić. Friedrich-Naumann-Stiftung für die Freiheit Bosnien-Herzegowina. Accessed February 15, 2022, from https://www.freiheit.org/sites/default/files/2021-05/disinformation_covid-19_march_2021.pdf

COVID-19 PANDEMIC IN BIH

In early 2020, a significant number of the regional media reports on the novel disease in China were on the sensationalist side, trying to make the far-away virus (at the time) appear closer than it really was.[29] Some were completely made up reports on first cases[30] in the region[31] or viral messages claiming deaths from the disease that was still not present in the region at the time.[32]

These early reports, which exaggerated the epidemiological situation in the region, may have had the "anchoring effect"[33] which have helped seed public distrust in any information about the virus - including those coming from sources perceived as mainstream and/or official.

Soon after the first cases of Covid-19 were reported in Bosnia and Herzegovina in March 2020, the Council of Ministers of BiH declared the state of natural/other disaster. Lower-level authorities imposed measures such as curfews (in some places around the clock for children and elderly); schools were closed and mask mandates introduced.

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[29] Tijana Cvjetićanin, "Fact-checking in the Balkans: While the Sky is Falling" *DigiComNet*. August 8, 2020. https://digicomnet.medium.com/fact-checking-in-the-balkans-while-the-sky-is-falling-4beca5423483 (accessed February 15, 2022).

[30] A number of media outlets published a false account of a Bosnian who claimed to have returned from the Covid-stricken "Diamond Princess" cruise ship: Rašid Krupalija, "Bizarni slučaj Zdravka Bumbulovića: mediji nasjeli na laži o boravku u karantinu i povratku kući."*Raskrinkavanje*. February 26, 2020. https://raskrinkavanje.ba/analiza/bizarni-slucaj-zdravka-bumbulovica-mediji-nasjeli-na-lazi-o-boravku-u-karantinu-i-povratku-kuci (accessed February 15, 2022).

[31] Amar Karađuz, "Koronavirus nije 'stigao u Sarajevo'," *Raskrinkavanje*. March 3, 2020. https://raskrinkavanje.ba/analiza/koronavirus-nije-stigao-u-sarajevo (accessed February 13, 2022).

[32] Milica Ljubičić, "Prijave zbog audio poruke da je više osoba umrlo od korona virusa u Srbiji," *Raskrikavanje*. February 26, 2020. https://www.raskrikavanje.rs/page.php?id=Prijave-zbog-audio-poruke-da-je-vise-osoba-umrlo-od-korona-virusa-u-Srbiji--575 (accessed February 13, 2022).

[33] The term describes cognitive bias where perception is heavily influenced by the first or early information received on a subject matter (https://thedecisionlab.com/biases/anchoring-bias/#section-8).

The surge in cases that followed was accompanied by a surge in disinformation about the pandemic. Local authorities had problems communicating the merits of the measures that were introduced, tightened or eased. Some have also been "caught" making inaccurate claims about the implementation of anti-pandemic measures such as testing.[34]

Access to public information in Bosnia and Herzegovina was also impaired in the early days of the pandemic. Transparency International BiH stated in its report that the "COVID-19 caused the slow-down in the work of institutions which resulted in the lack of access to certain information for more than five months, while the information on the conditions under which the donated medical aid was stored was impossible to access".[35] Public trust in the institutions and their handling of the health crisis was also undermined by several affairs that shook the country and are still awaiting their outcome.

Prime Minister of the Federation of BiH (FBiH) Fadil Novalic, the former head of the FBiH Civil Protection Authority, Fahrudin Solak, and Fikret Hodzic and his company "Srebrena Malina" are among the accused in an ongoing trial before the Bosnian state court.[36] Novalic and others were accused in December 2020 of conspiring to "abuse office, accept rewards for trading influence, money laundering and document fraud" in connection with the purchase of allegedly overpriced ventilators from China.

In September 2020, Branislav Zeljkovic, the head of the Republika Srpska Public Health Institute, was detained as part of an investigation into abuses in the public procurement process during the pandemic, fictitious money transfers and money laundering.[37] Three others, Slavko Bojic, Sasa Markovic and Dragan Dubravac were detained as well.

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[34] See, for example: Biljana Livančić-Milić, "Višković o broju testiranja u entitetima," *Istinomjer*. April 10, 2020. https://istinomjer.ba/viskovic-o-broju-testiranja-u-entitetima/ (accessed February 15, 2022).

[35] *Transparency International BiH.* "International Day for Universal Access to Information: The work of institutions slowed down due to the pandemic, progress related to transparency insufficient," September 28, 2020.

https://ti-bih.org/medjunarodni-dan-slobode-pristupa-informacijama-epidemija-usporila-rad-institucija-pomaci-u-transparentnosti-nedovoljni/?lang=en (accessed February 15, 2022).

[36] Albina Sorguč, "Bosnia Federation PM Novalic Indicted in 'Respirators' Case," *Detektor*. December 4, 2020. https://detektor.ba/2020/12/04/podignuta-optuznica-protiv-novalica-hodzica-solaka-ali-i-milicevic-u-predmetu-respiratori/?lang=en (accessed February 13, 2022).

[37] *N1,* "Head of BiH's RS entity Public Health Inst removed from post while in custody," September 23, 2021. https://ba.n1info.com/english/news/head-of-bihs-rs-entity-public-health-inst-removed-from-post-while-in-custody/ (accessed February 13, 2022).

The subject of the investigation are the contracts concluded by the RS Institute of Public Health during the coronavirus crisis, and the companies Travel4fun and Procontrol are also being investigated.

On March 21, 2020, the Government of the Republika Srpska (RS), by urgent procedure, adopted a decision on the procurement of a mobile field hospital intended to accommodate patients suffering from the novel coronavirus disease (Covid-19).[38] The contract with the supplier was terminated unilaterally on May 29, 2020,[39] since the complete equipment stipulated in the contract had not been delivered. The RS Prosecutor's Office launched an investigation in June.[40] Meanwhile, the 2.15 million Euro was returned to the Institute.

Another case that shook public trust during the crisis had to do with accusations that Covid-19 patients, but also other patients in Republika Srpska, were not getting medical, but industrial oxygen.[41] An investigation by Transparency International in Bosnia and Herzegovina has shown that five out of six companies contracted through public procurement calls to supply public healthcare institutions with oxygen, have been doing so without a proper authorization to import medicinal supplies.[42]

Following the rollout of the first Covid-19 vaccines in late 2020, it was understood that the immunization process in Bosnia and Herzegovina would not start soon. The purchase or procurement of the vaccines was the first stumbling block on the path towards mass immunization.

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[38] *RTRS*, "Vlada Srpske donijela odluku o nabavci pokretne bolnice," March 21, 2020. https://lat.rtrs.tv/vijesti/vijest.php?id=375561 (accessed February 13, 2022).

[39] *ATV*, "Raskinut ugovor o nabavci pokretne bolnice, dobavljač nije ispunio obaveze," May 29, 2020. https://www.atvbl.rs/vijesti/republika-srpska/raskinut-ugovor-o-nabavci-pokretne-bolnice-dobavljac-nije-ispunio-obaveze (accessed February 13, 2022).

[40] *Al Jazeera Balkans.* "Policija provodi istragu o nabavci pokretne bolnice." June 2, 2020. https://balkans.aljazeera.net/news/balkan/2020/6/2/policija-provodi-istragu-o-nabavci-pokretne-bolnice (accessed February 13, 2022).

[41]*Deutsche Welle,* "Afera "Kiseonik" trese Republiku Srpsku" September 28, 2021. https://www.dw.com/sr/afera-kiseonik-trese-republiku-srpsku/a-59335298 (Accessed March 30, 2022).

Radio Sarajevo, "Zolak o slučaju "kiseonik": Ovo nije afera, ovo je zločin!" October 8, 2021. https://radiosarajevo.ba/vijesti/bosna-i-hercegovina/zolak-o-slucaju-kiseonik-ovo-nije-afera-ovo-je-zlocin/432881 (Accessed February 13, 2022).

[42] *N1 Sarajevo*, "Transparency Intl calls for inspection of oxygen suppliers in healthcare sector," October 1, 2021. https://ba.n1info.com/english/news/transparency-intl-calls-for-inspection-of-oxygen-suppliers-in-healthcare-sector/ (accessed February 13, 2022).

In January 2021, the entity and state prime ministers met to discuss the immunization efforts and agreed that the entities will try to purchase vaccines separately.[43]

In the Republika Srpska entity, Covid-19 vaccination started on February 12, 2021.[44] On March 29, Banja Luka citizens over the age of 65 were prioritized for Covid-19 vaccination.[45] In the Federation's Sarajevo Canton, the Covid-19 vaccination started on March 10, 2021, when a major Sarajevo hospital administered first (donated) shots to its staff.[46] On March 25, first shipments of Pfizer/BioNTech and AstraZeneca vaccines, delivered thanks to the COVAX mechanism, arrived in Bosnia and Herzegovina.[47] More came in the following months, either through purchase or donations.

By March 31, some 42,000 Sputnik V vaccines were shipped from Russia to Republika Srpska, while the Federation of BiH failed to conclude an agreement on the purchase of the same vaccine and continued negotiating with other countries, in the meantime relying on vaccine donations.[48]

In late July, Sarajevo's Zetra hall was turned into a vaccination site where citizens were vaccinated without being required to schedule an appointment.

In late March 2021, Bosnian citizens traveled in droves to Serbia, which extended an invitation to citizens of neighboring countries to get vaccinated there.[49] This was repeated in June, and thousands more went to Serbia to get vaccinated.

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[43] Faruk Durmišević, "FBiH i dalje čeka na vakcine putem direktne nabavke," *Istinomjer*. March 20, 2021. https://istinomjer.ba/fbih-i-dalje-ceka-na-vakcine-putem-direktne-nabavke/ (accessed February 13, 2022).

[44] *Radio Slobodna Evropa*, "Počela vakcinacija u bh. entitetu Republika Srpska," February 12, 2021. https://www.slobodnaevropa.org/a/31099298.html (accessed February 13, 2022).

[45] *Radio Slobodna Evropa*, "U Banjaluci počela masovna vakcinacija starijih od 65 godina," March 29, 2021. https://www.slobodnaevropa.org/a/31174741.html (accessed February 13, 2022).

[46] *Al Jazeera Balkans*, "Vakcinacija osoblja COVID odjela Opće bolnice u Sarajevu," March 10, 2021. https://balkans.aljazeera.net/news/balkan/2021/3/10/vakcinacija-osoblja-covid-odjela-opce-bolnice-u-sarajevu (accessed February 13, 2022).

[47] *United Nations BiH*. "Prve isporuke vakcina putem COVAX mehanizma stigle u BiH" March 25, 2021. https://bosniaherzegovina.un.org/bhs/123137-prve-isporuke-vakcina-putem-covax-mehanizma-stigle-u-bih (accessed February 15, 2022).

[48] Aida Đugum & Milorad Milojević, "COVAX mehanizam 'proradio' u BiH," *Radio Slobodna Evropa*. March 31, 2021. https://www.slobodnaevropa.org/a/bih-vakcine-donacije-covid19/31180284.html (accessed February 13, 2022).

[49] *Al Jazeera Balkans*, "U Srbiji od 3. juna besplatna vakcinacija za građane BiH," June 2, 2021. https://www.slobodnaevropa.org/a/srbija-bih-vakcine-besplatna-vakcinacija/31286364.html (accessed February 13, 2022).

In July, Croatia's prime minister Andrej Plenković announced that vaccination is free for BiH citizens in that country.[50] Many of those who were vaccinated in Serbia and Croatia were not registered as immunized at home.

In the second half of 2021, the availability of vaccines in Bosnia and Herzegovina was no longer an issue, but the willingness to vaccinate was. In November, more than half a million doses of Covid-19 vaccines in the country were set to be destroyed due to expiration.[51] By that time, only 21% of the population was fully vaccinated against Covid-19, according to official figures. The percentage was likely higher, due to unregistered vaccinations abroad and the fact that the population figures are outdated.

By the end of January 2022, 14.5 thousand people had died from Covid-19 in Bosnia and Herzegovina.[52] This is a death rate of nearly 4.5 thousand per million, according to census data which estimates the population at 3.2 million.[53] The rate is likely higher, as the current population of Bosnia and Herzegovina is estimated to be significantly smaller than this number. While no official data exists, some research estimates that around half a million people left the country since 2013[54] and the migration has apparently continued even during the pandemic.[55]

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[50] Stipe Majić, "Plenković: Besplatno cijepljenje u Hrvatskoj omogućeno za sve građane iz BiH," *Anadolu Agency*. July 21, 2021. https://www.aa.com.tr/ba/korona-virus/plenković-besplatno-cijepljenje-u-hrvatskoj-omogućeno-za-sve-građane-iz-bih/2310899 (accessed February 14, 2022).

[51] Marija Augustinović, & Milorad Milojević, "Vakcine propadaju, samo 20 posto vakcinisanih u BiH," *Radio Slobodna Evropa*. November 10, 2021. https://www.slobodnaevropa.org/a/bih-vakcine-unistavanje-vakcinacija/31555241.html (accessed February 14, 2022).

[52] *Bosnia-Herzegovina*. Worldometer. (n.d.) Accessed February 15, 2022, from https://www.worldometers.info/coronavirus/country/bosnia-and-herzegovina/

[53] However, the validity of the census data has been disputed. See, for example: C.A. Why Not (2014). (publication). "Report on the Civic Monitoring of the Census in BiH 2013 – Popismonitor.ba." Accessed February 15, 2022, from https://zastone.ba/app/uploads/2014/03/Report-on-the-Civic-Monitoring-of-the-Census-in-BiH-2013-–-Popismonitor.ba_.pdf

[54] Milorad Milojević, "BiH u 2021. godini napustio grad veličine Banjaluke," *Radio Slobodna Evropa*. December 29, 2021. https://www.slobodnaevropa.org/a/bih-odlazak-porodice/31629794.html (accessed February 14, 2022).

[55] Milojević, "BiH u 2021."

However, even with the possibly inflated population numbers, these statistics still make the country one of the worst hit in the world. According to worldometers.info, by the end of 2021 BiH has consistently had either the second[56] or third highest death rate of Covid deaths per million population, surpassed only by Peru and, at times, Bulgaria.
This fact has been reported by the local media,[57] but meaningful debate about the underlying reasons and accountability for such devastating toll of the pandemic is still lacking.

On the other hand, BiH society is still permeated with conspiratorial and disinformation narratives which downplay, or even negate, the very existence of the Covid-19 pandemic. The lack of a timely, consistent and truly visible info-campaign [58] on immunization against Covid-19, the affairs that followed the pandemic response, the general lack of trust in institutions and the overall low quality of information

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[56] Dalio Sijah, "Vakcine propadaju, interes za vakcinaciju slab, a kampanje neprimjetne," *Istinomjer*. November 4, 2021. https://istinomjer.ba/vakcine-propadaju-interes-za-vakcinaciju-slab-a-kampanje-neprimjetne/ (accessed February 14, 2022).

[57]*Al Jazeera Balkans*. "Bosna i Hercegovina prva u Evropi po smrtnosti od korone," September 18, 2021. https://balkans.aljazeera.net/news/balkan/2021/9/18/bosna-i-hercegovina-prva-u-evropi-po-smrtnosti-od-korone (accessed February 15, 2022).

Klix. "Bosna i Hercegovina prva u Evropi po smrtnosti od korone," September 18, 2021. https://www.klix.ba/vijesti/bih/bosna-i-hercegovina-prva-u-evropi-po-smrtnosti-od-korone/210918017 (accessed February 15, 2022).

Dnevni avaz. "BiH druga u svijetu po smrtnosti od korone a prva u Evropi," September 18, 2021. https://avaz.ba/vijesti/bih/682252/bih-druga-u-svijetu-po-smrtnosti-od-korone-a-prva-u-evropi (accessed February 15, 2022).

Radio Slobodna Evropa, "BiH druga na svetu po broju umrlih od korona virusa na million stanovnika," May 24, 2021. https://www.slobodnaevropa.org/a/bih-smrtnost-korona-virus-svijet-druga/31271343.html (accessed February 15, 2022).

[58] Dalio Sijah, "Intenzivna kampanja za imunizaciju protiv COVID-19 i dalje slabo primjetna," *Istinomjer*. September 6, 2021. https://istinomjer.ba/intenzivna-kampanja-za-imunizaciju-protiv-covid-19-i-dalje-slabo-primjetna/ (accessed February 15, 2022).

Dalio Sijah & Elma Murić, "Koliko su građani informisani o značaju imunizacije protiv COVID-19?" *Istinomjer*. July 7, 2021. https://istinomjer.ba/koliko-su-gradjani-informisani-o-znacaju-imunizacije-protiv-covid-19/ (accessed February 15, 2022).

Sanjin Mahmutović, "Vakcine stižu a kampanje o značaju imunizacije protiv COVID-19 i dalje slabo vidljive," *Istinomjer*. August 6, 2021. https://istinomjer.ba/vakcine-stizu-a-kampanje-o-znacaju-imunizacije-protiv-covid-19-i-dalje-slabo-vidljive/ (accessed February 15, 2022).

Dalio Sijah, "Šta do sada znamo o vakcinaciji protiv COVID-19 u BiH?" *Istinomjer*. January 18, 2021. https://istinomjer.ba/sta-do-sada-znamo-o-vakcinaciji-protiv-covid-19-u-bih/ (accessed February 15, 2022).

environment in the country have provided little or no counterbalance to the avalanche of false information about the pandemic that the people were subjected to.

The scope and impact of the "infodemic" in BiH and its surrounding were perhaps most visible to the fact-checking newsrooms which have been on the frontline of fighting the disinformation and destructive narratives which encouraged or justified health and life-threatening behavior. Predictions based on those insights have largely proven to be correct.

METHODOLOGY
RESEARCH DESIGN

This research uses quantitative and qualitative approaches to answer the following research questions:

o What is the prevalence and intensity of belief in various types of conspiracy theories and complex disinformation narratives in BiH society?

o Is there a correlation between certain socio-demographic characteristics and the inclination towards believing in conspiracy theories and similar narratives?

o How do such beliefs affect behavior, specifically health choices in the circumstances of an extended health crisis (Covid-19 pandemic)?

o What are the underlying assumptions of believers in conspiracy theories about their goals and "perpetrators"? In contrast, which actors and sources of information are seen as trustworthy?

o How do believers of conspiracy theories respond to exposure to accurate information coming from official/institutional sources? Which sources and/or communication styles prove more or less successful in conveying accurate information?

Based on the research results, the discussion explores the short and long-term strategies that the relevant actors can employ in tackling these harmful systems of beliefs.

QUANTITATIVE RESEARCH

The method chosen for data collection was an online survey on a representative sample for the adult population of Bosnia and Herzegovina. The sample is representative of the general population in terms of gender, urban/rural residence, and region. The online survey was chosen in consultations with experts and the polling agency, due to two main factors: the inability to safely conduct live surveys in the circumstances of the pandemic and the limits of telephone surveys. The limits of telephone surveys include the lack of representation of households and persons without landline, which would skew the sample toward the elderly population (on the other hand, the online survey minimizes the representation of the oldest age groups). The telephone survey format was also less appropriate for the content and volume of the questionnaire used in this survey.

The survey responses used in this research were weighted in accordance with the 2013 Census on the following variables: a combination of gender and age, geographical region, education and urban/rural type of settlement. This was done to ensure additional representativeness of the data and more accurate inferences about the population.

The questionnaire had a combination of open-ended and multiple-choice questions. Various aspects of belief in conspiratorial narratives in the general population of BiH were examined through the opinion poll to answer the research questions and provide data to inform the policy recommendations for relevant stakeholders.

The survey is designed to answer the research question by providing data on 5 groups of parameters:

- o Demographic characteristics of the sample population
- o Prevalence and intensity of general belief in conspiracy theories and complex disinformation narratives, as well as belief in specific categories of conspiracy theories, in the overall population and across different demographics
- o Correlation between such beliefs and behavior, such as choices of information sources and health choices (specifically immunization against Covid-19)
- o Correlation between such beliefs and other beliefs and attitudes, such as trust in institutions, trust in non-scientific health practices known as "alternative medicine" and attitudes towards main environmental, political and health issues of today

Data processing and analysis were done twofold, depending on the type of questions and variables that were analyzed. Descriptive statistics were used to present the basic findings of the research, while Welch Two Sample Weighted T-tests, one-way ANOVA, and multiple linear regression were used to test hypotheses and make inferences regarding the data and the population. The Pearson correlation coefficients presented in the data analysis should be understood with the following simplified explanation in mind:

0: indicates that there is no correlation between the compared variables (A is completely independent of B)

1: indicates a perfectly positive correlation between two variables (value of B always moves in the same direction as value of A with the same magnitude: when A increases, B increases with the same magnitude)

-1: (value of B always moves in the opposite direction from value of A with the same magnitude: when A increases, B decreases with the same magnitude)

In research, we rarely encounter correlations of 1 or -1. Similarly, what is considered a strong or weak correlation depends on the type of research undertaken. In this research, we report correlations and make inferences based on their relative strength and comparability. For example, when we compare variables of the same type such as trust in individual institutions, we make inferences regarding which ones, based on their correlation with the vaccine status of the respondents, matter more for one's decision to get vaccinated or not.

QUESTIONS ON CONSPIRACY THEORIES AND COMPLEX DISINFORMATION NARRATIVES

The participants in the survey were given statements that connote popular conspiracy theories and complex disinformation narratives we have identified through several sources, primarily the fact-checking work of Raskrinkavanje; the work of other fact-checking initiatives in the region (SEE Check network)[59] and previous research of conspiracy theories in BiH and the region.[60]

The material that Raskrinkavanje encounters through its debunking work shows that the conspiracy theories often overlap and "borrow" from each other, so that one isolated claim can appear as an element of different narratives and be used to fill different "conspiratorial" frames.

The phrase "complex disinformation narratives" in this research stands for narratives which do not necessarily have all the elements of conspiracy theories, but have similar topics, narrative structures, internal logic and implications. These are usually stories which are built on various misconceptions and false information, imply harmful effects of certain events or phenomena, but do not detail the conspiratorial dimension of the "plot" and do not specify who is responsible for the supposed harm or harmful intent. Many of the statements containing false claims can fall in either the category of conspiracy theories or complex disinformation narratives, depending on how they are used and contextualized in specific cases. For example, the claim that "unvaccinated children are healthier than the vaccinated" can appear as a part of a conspiracy theory that someone is deliberately hurting children with vaccines in order to accomplish some nefarious goal like "depopulation", or it can be an expression of a general distrust in vaccines which is tied to one or more different narratives.

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[59] *About us*. SEE Check. (n.d.) Accessed February 15, 2022, from https://seecheck.org/index.php/about/

[60] Nebojša Blanuša, "Conspiracy Theories in and About the Balkans"in *Routledge Handbook of Conspiracy Theories*, edited by Michael Butter, and Peter Knight, 596-609. Routledge, 2021 ; Turjačanin, Vladimir, et al. "Conspiracy theories in Bosnia and Herzegovina", 2018; Bieber, Florian, Tina Prelec & Zoran Nechev. (2020). (publication). "Policy Brief: The Suspicious Virus: Conspiracies and COVID19 in the Balkans". BiEPAG. Accessed February 15, 2022, from https://biepag.eu/publication/policy-brief-the-suspicious-virus-conspiracies-and-covid19-in-the-balkans/

A total of **59 short statements** were distributed in 5 sets throughout the questionnaire and the respondents were asked to indicate their agreement with the given statements on a scale from 1 to 5, where one (1) means they completely disagree, and five (5) that they completely agree with the claim.

Out of the 59 statements, 48 connote conspiracy theories and disinformation narratives presumed to be familiar to the BiH population. Some of these claims may connote more than one such narrative, depending on which "frame" the respondents may recognize them from. These statements were used to calculate the "index" of belief in conspiracy theories, which represents the mean value of responses received on a Likert scale ranging from 1 to 5 (completely disagree to completely agree).

The remaining 11 claims were not conspiratorial narratives, but had some resemblance to them, including statements about adverse events that have already occurred or pose a real risk (for example, the problem of air pollution), events that resemble conspiratorial narratives about powerful actors who knowingly hide facts about harmful phenomena or events (for example, lack of transparency of authorities of some countries in the beginning of the pandemic, or harmful practices of pharmaceutical companies which have been proven in court), or attitudes about phenomena which are frequent subjects of conspiracy theories, such as the Covid-19 pandemic (for example, a claim that anti-pandemic measures in the country were not well thought out).

The non-conspiratorial claims were added to the questionnaire to balance out the more intense and implausible claims containing conspiratorial narratives, so that the respondents would not get overwhelmed with such statements and it would be easier for them to answer the questions authentically and honestly. The selection of statements which connote conspiratorial or disinformation narratives was made with the aim to cover a "representative" range of conspiracy theories which currently circulate or have been historically significant in BiH and the region, having in mind different topics, themes, scope and locus of such narratives.

TYPES OF CONSPIRACY THEORIES AND COMPLEX DISINFORMATION NARRATIVES

The categories used to sort narratives and selected statements were informed by both the theoretical background and practical experience in debunking conspiracy theories through fact-checking. Special attention was paid to selecting and organizing them into categories applicable to local context and corresponding to current events, specifically the pandemic.

The **topics** of conspiracy theories and disinformation narratives covered by the statements include statements about politics, health, technology, Covid-19 pandemic and vaccines against Covid-19. Due to varying complexity of conspiratorial narratives, some statements have elements of only one dominant topic, while others might span across two or more topics.[61]

Elements of **political conspiracy theories were present in 38 of the statements** given to the respondents, with "politics" being broadly defined to include various beliefs about powerful actors who secretly run key processes which determine peoples' lives, even if they are not politicians in a strict sense (such are narratives about Bill Gates "controlling" the pandemic and/or the WHO, George Soros controlling governments of different countries, but also some versions of "Big Pharma" narratives[62]).

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[61] For example, these statements include elements of at least three different topics:

- o The HAARP system was created to control time and people (politics, technology, health)
- o Using depleted uranium ammunition during the 1990's bombing led to an increase in malignant diseases in this area (politics, technology, health)
- o The pandemic is just an excuse to introduce a 5G network (politics, technology, Covid-19 pandemic)
- o The Covid-19 pandemic is part of Agenda 21/2030 and other plans to establish the New World Order (politics, technology, Covid-19 pandemic)

[62] Margarita Perić, "Pandemija nije laž iza koje stoji Bill Gates, niti se Covid-19 liječi vitaminom C," *Faktograf*. April 16, 2020. https://faktograf.hr/2020/04/16/pandemija-nije-laz-iza-koje-stoji-bill-gates-niti-se-covid-19-lijeci-vitaminom-c/ (accessed February 14, 2022).
Petar Vidov, "Teorija zavjere da nas Bill Gates želi pobiti cjepivima počiva na brojnim dezinformacijama,"

Five (5) statements with elements of **antisemitism** were also included in this category, due to the historical significance and persistence of these types of conspiratorial narratives in the region of Western Balkans.[63] Examples include versions of Holocaust denial narratives and more or less explicit statements that secret societies, individuals or families of real or perceived Jewish descent "control the world".[64]

Disinformation or conspiratorial narratives about **health and medicine** were present in 13 statements offered in the survey, not counting those related to the Covid-19 pandemic and vaccines against Covid-19. Due to their current significance, these topics were probed in more detail, not just within the 5 sets of short statements offered to the participants, but as separate sections of the questionnaire.

Elements of conspiratorial narratives about health and medicine did, however, include statements about vaccines other than those against Covid-19, along with other claims about things or events that can have an impact on human health, body and wellbeing.[65]

Narrative elements pertaining to misconceptions, fears and distrust of **technology** were present in 10 statements, often crossing with statements about health.

Faktograf. April 30, 2021. https://faktograf.hr/2020/04/30/teorija-zavjere-da-nas-bill-gates-zeli-pobiti-cjepivima-pociva-na-brojnim-dezinformacijama/ (accessed February 15, 2022).

Petar Vidov, "Ne vjerujte teorijama zavjere, za dolazak izbjeglica u Europu nije kriv George Soros," *Faktograf*. May 8, 2019.

https://faktograf.hr/2019/05/08/ne-vjerujte-teorijama-zavjere-za-dolazak-izbjeglica-u-europu-nije-kriv-george-soros/ (accessed February 15, 2022).

Melisa Skender, "Alemku Markotić i Novu TV upetljali u izmišljenu međunarodnu zavjeru farmaceutskog lobija," *Faktograf*. July 20, 2020. https://faktograf.hr/2020/07/10/alemku-markotic-i-novu-tv-upetljali-u-izmisljenu-medunarodnu-zavjeru-farmaceutskog-lobija/ (accessed February 15, 2022).

[63] Blanuša, 2020, 599-605

[64] Marija Ćosić & Emir Zulejhić, "Kompleksna priča o 'kripto-Jevrejima' koji navodno upravljaju Balkanom," *Raskrinkavanje*. August 16, 2021. https://raskrinkavanje.ba/analiza/kompleksna-prica-o-kripto-jevrejima-koji-navodno-upravljaju-balkanom (accessed February 14, 2022).

[65] Amar Karađuz, "Unutarnja upotreba vodikovog peroksida neće ubiti ni viruse ni ćelije raka, ali može izazvati zdravstvene probleme," *Raskrinkavanje*. March 19, 2021. https://raskrinkavanje.ba/analiza/unutarnja-upotreba-vodikovog-peroksida-nece-ubiti-ni-viruse-ni-celije-raka-ali-moze-izazvati-zdravstvene-probleme (accessed February 15, 2022).

Faktograf. "Netočno je da su sudovi priznali kako cjepivo uzrokuje autizam," May 19, 2020. https://faktograf.hr/2020/05/19/netocno-je-da-su-sudovi-priznali-kako-cjepivo-uzrokuje-autizam/ (accessed February 15, 2022).
Raskrinkavanje. "Vakcine nisu sredstvo za depopulaciju niti postoji skrivani lijek za maligne tumore." July 27, 2021. https://raskrinkavanje.ba/analiza/vakcine-nisu-sredstvo-za-depopulaciju-niti-postoji-skrivani-lijek-za-maligne-tumore (accessed February 15, 2022).

These are mostly statements falsely claiming that devices related to information and communications technologies have a detrimental impact on health of humans or other living beings (5G towers, HAARP antennas) and/or that they are used to harm or control people (micro-chips[66]).

Finally, 16 of the short statements contain elements of false narratives and conspiracy theories about the **Covid-19 pandemic**, with 14 statements targeting the virus/disease and additional 2 statements specifically targeting **vaccines against Covid-19**.[67]

In terms of **themes** of statements given to respondents, the Covid-19 pandemic narratives included: claims that the virus does not exist (4 statements; examples include a recurring claim that "chemtrails" are the real cause of Covid-19);[68] the narrative that the pandemic is a means for depopulation or "enslavement" of humanity (4 statements, with examples like claims that Bill Gates and "the elites" are using the pandemic to monitor and control people);[69] the narrative that the pandemic is either a result of, or a cover for the introduction of a supposedly harmful 5G technology[70] (2 statements).

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[66] Mladen Lakić, "David Icke o pandemiji: Bajke o 5G mreži i "čipovima u vakcinama"," *Raskrinkavanje*. May 1, 2020. https://raskrinkavanje.ba/analiza/david-icke-o-pandemiji-bajke-o-5g-mrezi-i-cipovima-u-vakcinama (accessed February 15, 2022).

 Nerma Šehović, "HAARP postoji - ali nije tajno oružje koje izaziva zemljotrese i nepogode," *Raskrinkavanje*. February 23, 2021. https://raskrinkavanje.ba/analiza/haarp-postoji-ali-nije-tajno-oruzje-koje-izaziva-zemljotrese-i-nepogode (accessed February 15, 2022).

Milica Ljubičić, "Mikročip za životinje kao „dokaz" da se u vakcinama nalaze čipovi," *Raskrikavanje*. May 21, 2021. https://www.raskrikavanje.rs/page.php?id=Mikrocip-za-zivotinje-kao-dokaz-da-se-u-vakcinama-nalaze-cipovi-849 (accessed February 15, 2022).

[67] Trust in Covid-19 vaccines and misconceptions about the Covid-19 pandemic in general were more thoroughly examined in a dedicated part of the survey.

[68] Melita Vrsaljko, "Pandemija Covida-19 nema veze s "chemtrails otrovima"," *Faktograf*. December 23, 2020. https://faktograf.hr/2020/12/23/pandemija-covida-19-nema-veze-s-chemtrails-otrovima/ (accessed February 15, 2022).

Nerma Šehović, "Nakon Nove godine, "chemtrails" izmišljotine kao opravdanje za "novi val zaraze"," *Raskrinkavanje*. January 7, 2022. https://raskrinkavanje.ba/analiza/nakon-nove-godine-chemtrails-izmisljotine-kao-opravdanje-za-novi-val-zaraze (accessed February 15, 2022).

[69] Nerma Šehović, "Kako je teksaška ljubiteljica oružja postala novi 'tumač pandemije' na Balkanu," *Raskrinkavanje*. March 16, 2021. *Raskrinkavanje*. https://raskrinkavanje.ba/analiza/kako-je-teksaska-ljubiteljica-oruzja-postala-novi-tumac-pandemije-na-balkanu (accessed February 14, 2022).

[70] Marija Manojlović, "Šaljivi video nije dokaz da 5G uzrokuje Covid-19," *Raskrinkavanje*. December 14, 2021. https://raskrinkavanje.ba/analiza/saljivi-video-nije-dokaz-da-5g-uzrokuje-covid-19 (accessed February 14, 2022).

One short statement was included on each of the following conspiracy theories: Covid-19 vaccines' safety/efficacy,[71] safety and efficacy of masks,[72] Covid-19 cases and death rates being inflated,[73] the virus being developed by the US military,[74] and a cure for Covid being kept hidden.

In terms of **scope**, 18 of the 48 statements offer "explanations" for a single event or issue (for example, the widespread claim that MMR vaccines have been proven to cause autism),[75] 15 can be described as systemic, wide conspiracies which aim to explain more complex phenomena or strings of events (for example, migrations being interpreted as part of a plan to change ethnic structure in transit or destination countries),[76] and 15 statements correspond to what is described in some literature as superconspiracies - explanations and claims which aspire to give all-encompassing

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[71] A narrative that prominent politicians have faked getting the Covid-19 vaccine and got placebo instead Ana Benačić, "Nema dokaza da su (hrvatski) političari primili lažna cjepiva," *Faktograf*. November 4, 2021. https://faktograf.hr/2021/11/04/nema-dokaza-da-su-hrvatski-politicari-primili-lazna-cjepiva/ (accessed February 15, 2022).

[72] Conspiracy theories about safety and efficacy of masks can be seen in examples of social media users claiming that masks don't really protect us, but are there to "cancel our human rights"

Mladen Lakić, "Ne, maske i vakcine neće ukinuti ničija ljudska prava," *Raskrinkavanje*. November 20, 2020. https://raskrinkavanje.ba/analiza/ne-maske-i-vakcine-nece-ukinuti-nicija-ljudska-prava (accessed February 15, 2022).

[73] The claims that hospitals offered money to the families of deceased patients to say their relatives died of Covid-19

Rašid Krupalija, "Bolnice ne nude novac porodicama preminulih da "priznaju" COVID-19 kao uzrok smrti," *Raskrinkavanje*. July 7, 2020. https://raskrinkavanje.ba/analiza/bolnice-ne-nude-novac-porodicama-preminulih-da-priznaju-covid-19-kao-uzrok-smrti (accessed February 15, 2022).

[74] The claims of the virus being deployed by the US can be found in baseless theories that the US soldiers initially brought the virus into China. *Fake News Tragač*. "Ne, nema dokaza da su američki vojnici doneli koronu u Kinu." March 20, 2020. https://fakenews.rs/2020/03/20/ne-nema-dokaza-da-su-americki-vojnici-doneli-koronu-u-kinu/ (accessed February 15, 2022).

[75] Tijana Cvjetićanin, "Vanredna vijest" o vakcinama i autizmu: Izmišljotina od početka do kraja," *Raskrinkavanje*. December 6, 2017. https://raskrinkavanje.ba/analiza/vanredna-vijest-o-vakcinama-i-autizmu-izmisljotina-od-pocetka-do-kraja (accessed February 14, 2022).
Tijana Cvjetićanin, "Vanredna vijest" o vakcinama i autizmu (2): Viralne neistine o virusu iz vakcine," *Raskrinkavanje*. December 12, 2017. https://raskrinkavanje.ba/analiza/vanredna-vijest-o-vakcinama-i-autizmu-2-viralne-neistine-o-virusu-iz-vakcine (accessed February 14, 2022).

[76] Marija Ćosić, "Dezinformativna "ekspertiza" Dževada Galijaševića u novom YouTube videu." *Raskrinkavanje*. August 4, 2021. https://raskrinkavanje.ba/analiza/dezinformativna-ekspertiza-dzevada-galijasevica-u-novom-youtube-videu (accessed February 15, 2022).
Ana Benačić, "Opasna teorija zavjere o velikoj zamjeni stanovništva širi se Hrvatskom," *Faktograf*. December 13, 2019. https://faktograf.hr/2019/12/13/opasna-teorija-zavjere-o-velikoj-zamjeni-stanovnistva-siri-se-hrvatskom/ (accessed February 15, 2022).

interpretations of events and phenomena on the largest scale and in a long timeframe (for example, conspiracy theories about "New World Order").[77]

When it comes to the **locus** of the conspiracy theories connoted through the given statements, a large majority (40 statements) were those with global themes such as various versions of "world government" conspiracy theories ("Deep state", "Kabbalah", "crisis actors" being used to stage globally relevant events and similar).[78] There were 6 statements about themes that were specific for the SEE region (for example, a claim that Josip Broz Tito was "a plant" and/or a "foreign agent") [79] and 2 "localized" statements, i.e. related to a specific place (for example, the 9/11 terrorist attacks).[80]

[77] Ivor Fuka, "Teoretičari zavjere u spomeniku iz 1980. pronašli "dokaz" stvaranja "novog svjetskog poretka"," *Faktograf*. March 12, 2021. https://faktograf.hr/2021/03/12/teoreticari-zavjere-u-spomeniku-iz-1980-pronasli-dokaz-stvaranja-novog-svjetskog-poretka/ (accessed February 14, 2022).

[78] Melisa Skender, "Dezinformacije o lijekovima protiv Covida-19 i teorija zavjere o "globalističkoj kabali"," *Faktograf*. May 20, 2020. https://faktograf.hr/2020/05/20/dezinformacije-o-lijekovima-protiv-covida-19-i-teorija-zavjere-o-globalistickoj-kabali/ (accessed February 15, 2022).
Ivana Perić, "Veliki reset" i dalje je mamac za teorije zavjere," *Faktograf*. May 7, 2020. https://faktograf.hr/2021/05/07/veliki-reset-i-dalje-je-mamac-za-teorije-zavjere/ (accessed February 15, 2022).
Tijana Cvjetićanin, "Izmišljena priča o CNN-u i djevojčici iz Sirije," *Raskrinkavanje*. April 18, 2018. https://raskrinkavanje.ba/analiza/izmisljena-prica-o-cnn-u-i-djevojcici-iz-sirije (accessed February 15, 2022).

[79] Stefan Gužvica, "Tito je zapravo bio… Josip Broz iz Kumrovca." *Faktograf*. January 27, 2021. https://faktograf.hr/2021/01/27/tito-je-zapravo-bio-josip-broz-iz-kumrovca/ (accessed February 14, 2022).

[80] *Faktograf*, "Čovjek koji vjeruje da vanzemaljci porobljavaju svijet širi teoriju zavjere o napadu na WTC," December 10, 2019. https://faktograf.hr/2019/12/10/covjek-koji-vjeruje-da-vanzemaljci-porobljavaju-svijet-siri-teoriju-zavjere-o-napadu-na-wtc/ (accessed February 14, 2022).

IN-DEPTH QUESTIONS

Misconceptions related to Covid-19 and vaccines against Covid-19 were probed in more detail, separate from the "conspiracy index" described above. The respondents were asked to assess the probability or veracity of multiple false claims about the vaccines and/or the SARS-CoV-2 virus, starting with the question about their own vaccination status and followed up by questions about presumed specific threats and/or motives for conspiracies they deemed as realistic. These questions aimed to establish the connection between such beliefs and behavior choices and preferences.

Additionally, the respondents were probed to establish the level of trust they have in various institutions, their information habits when it comes to these two topics.
The respondents were also asked to evaluate how much they trust official medicine in comparison with various types of "alternative medicine" and how worried they are about various issues (environmental problems, a possible threat of war and a prolonged pandemic).

QUALITATIVE RESEARCH

Qualitative research was conducted through focus groups discussions and in-depth interviews with relevant stakeholders.

Focus groups discussions were used to gain more insight into the reasoning and motivation behind beliefs in conspiracy theories, specifically those about Covid-19 vaccines and the pandemic in general. Additionally, different communication strategies of conveying accurate information about the false beliefs adopted by the participants were tested in focus groups, to establish if different approaches would produce different responses in terms of questioning the adopted beliefs.

Semi-structured interviews with stakeholders from sectors like healthcare, science and education and the media were conducted. The interviewees were presented with the findings from the survey most relevant for their fields of practice or expertise, and their perspectives on the research results were discussed in the interviews.

The results of the qualitative research were used to inform the recommendations for tackling the problems identified in the research.

SURVEY RESULTS AND ANALYSIS RESEARCH SAMPLE (DEMOGRAPHICS)

The survey was conducted by a polling agency, through an online poll of 1018 participants, on a representative sample for the population of Bosnia and Herzegovina. Women participated with 51.1% (521) and men with 48.9% (497) in the sample, with 50.8% of participants from rural and 48.2% from urban areas.

All participants were at least 18 years old, with 15.3% of participants aged 18-24; 18.7% participants aged 25-34; 30.3% of participants aged 35-44; 18.4% participants aged 45-54 and 17.3% of participants aged 55 or older. Male participants were slightly overrepresented in all but the biggest age group (35-44), where female participants were represented with 61.8%.

The majority of the participants, 84%, have completed secondary school; 14.2% hold a degree from an institution of higher education while 1.8% of the participants have completed primary school or less.

More than a half of the participants, 61.5%, were employed; 15.9% of the participants were unemployed; roughly one in ten participants were students; 6.8% of the participants were retired and 4.8% of the participants refused to give an answer to the question on employment status, or answered "other".

Women are overrepresented among the unemployed, more than twice as much as men (21.7% women compared to 9.8% men were unemployed), while the opposite is found among retired participants (9.3% men compared to 4.3% women).

In terms of territorial distribution of the survey's respondents, 648 or 63.7% came from the Federation of Bosnia and Herzegovina, 344 or 33.8% from Republika Srpska and 26 or 2.5% from Brčko District.

Gender	Sample	Percentage
Female	521	51.10%
Male	497	48.90%
Total	1018	100%

Table 1: Survey demographics (Gender)

Age	Sample	Percentage	Women	Men
18 - 24	156	15.30%	45.70%	54.30%
25 - 34	191	18.70%	44.80%	55.20%
35 - 44	308	30.30%	61.80%	38.20%
45 - 54	187	18.40%	44.90%	55.10%
55 +	176	17.30%	50.80%	49.20%

Table 2: Survey demographics (Age)

Education	Sample	Percentage	Women	Men
Primary education	**18**	**1.76%**	**1.40%**	**2.30%**
Secondary education	**855**	**83.96%**	**83.50%**	**84.40%**
High education	**145**	**14.17%**	**15.10%**	**13.30%**

Table 3: Survey demographics (Education)

Employment	Sample	Percentage	Women	Men
Employed	**626**	**61.50%**	**64.90%**	**58.30%**
Unemployed	**162**	**15.90%**	**9.80%**	**21.70%**
Retired	**69**	**6.80%**	**9.30%**	**4.30%**
Student	**113**	**11.10%**	**12.20%**	**10%**
Other	**27**	**2.70%**	**1.70%**	**3.70%**
No answer	**22**	**2.10%**	**2.20%**	**2.10%**

Table 4: Survey demographics (Employment)

Location	Sample	Percentage	Women	Men
FBiH	648	63.7%	49.48%	50.52%
RS	344	33.8%	54.01%	45.99%
BD	26	2.5%	54.91%	45.09%

Table 5: Survey demographics (Location)

BELIEF IN CONSPIRACY THEORIES: POLL RESULTS

The 48 short statements conveying conspiracy theories were used to calculate the "index" of belief in conspiracy theories, overall and for each of the 5 topics and one sub-topic described above. The index is the mean value of responses received, on a Likert scale ranging from 1 - completely disagree, to 5 - completely agree, for all the statements pertaining to conspiratorial narratives. With that index, it is possible to examine how inclined different demographics in the total sample are to believe in conspiracy theories.

Each individual was assigned an index value that is the arithmetic mean of their answers on a Likert scale ranging from 1 - completely disagree, to 5 - completely agree, for all the statements pertaining to conspiratorial narratives. The Cronbach's Alpha coefficient for these 48 items is 0.965 indicating an extremely high degree of reliability and internal consistency. The 95 % confidence interval for Cronbach's Alpha places it between 0.962 and 0.968.

The average response value to these questions is 3.07, which is slightly above the value 3 which corresponds to the "Neither agree nor disagree" answer. This means that, on average, participants fall in the middle, neither agreeing or disagreeing with the statements (3).

The overall belief in conspiracy theories is highest in Republika Srpska (3.15), followed by Brčko District (3.11) and the Federation of Bosnia and Herzegovina (3.03). However, the results of one-way ANOVA indicate that there is no statistically significant difference in overall belief in conspiracy theories among the participants from the three administrative units $F(2 = [2.9309], p = 0.0538)$.

There is almost no difference between genders in the overall belief in conspiracy theories. The average response value for women is 3.07 and 3.08 for men. Considering age, average belief is highest among those 55 years of age and older (3.21) and lowest among those between 18 and 24 years of age (2.90). The differences in belief in conspiracy theories among different age groups are significant as determined by one-way ANOVA ($F(4, 1013) = 5.186$, $p < .001$. A post-hoc Tukey test showed statistically significant differences in the degree of belief in conspiracy theories between the

following age groups: 18 - 24 and 55 and older (adj. p = .003), 25 - 34 and 55 and older (adj. p = .021), 18 - 24 and 45 - 54 (adj. p = .032), and 18 - 24 and 35 - 44 (adj. p = .019). These results indicate a clear difference between the youngest group of adults and everyone else when it comes to belief in conspiracy theories. The young adults exhibit significantly lower belief in conspiracy theories compared to the rest of the population.

The Pearson correlation coefficient shows a moderately strong negative correlation between belief in conspiracy theories and vaccination status r(980) = - .31, p <.001.[81] Those that are vaccinated have a mean value of 2.85 in the index of belief in conspiracy theories, while those who are not vaccinated have a mean value of 3.33. The differences between the two groups are highly significant as determined by a Welch Two Sample Weighted T-test t(964.72) = -10.48, p <.001.

The vaccination status was coded as a dummy variable taking the value of 1 when the respondent stated they were vaccinated and 0 when they stated they were not vaccinated against Covid-19. A simple linear regression was calculated to determine the degree of variance in vaccination status based on belief in conspiracy theories. A significant regression equation was found (F(1, 980) = 107.5, p < .001, with an R^2 = .099. A linear regression model calculated to determine the degree of variance in vaccination status based on belief in conspiracy theories, age, and whether the respondent attended college, resulted in the following significant regression equation (F(978) = 69.53, p < .001, with an adjusted R^2 = .17. In other words, belief in conspiracy theories explains almost 10% of variation in responses regarding vaccination status, while a model consisting of both belief in conspiracy theories and age group accounts for 17% of variation in vaccination status.

When it comes to education, the differences between the groups are not statistically significant when we use 11 categories of educational status as determined by one-way ANOVA (F(10, 1007) = 1.707, p = 0.07). However, when various educational degrees are grouped into two categories (college educated and non-college educated), college educated participants show slightly lower belief (2.96) compared to participants without a university degree (3.09). The differences between the two groups are statistically significant as determined by a Welch Two Sample Weighted T-test t(525.15) = -2.468, p = .013.

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[81] Vaccination status was denoted with a 0 if the person was unvaccinated and 1 if the person was vaccinated.

Regression results: Is the respondent vaccinated against Covid-19?

	Dependent variable:	
	Vaccination status	
	(1)	(2)
CT Index	-0.205***	-0.227***
	(0.020)	(0.019)
Age		0.011***
		(0.001)
College educated		0.075*
		(0.041)
Constant	1.184***	0.809***
	(0.063)	(0.072)
Observations	982	982
R^2	0.099	0.176
Adjusted R^2	0.098	0.173
Residual Std. Error	0.471 (df = 980)	0.451 (df = 978)
F Statistic	107.532*** (df = 1; 980)	69.532*** (df = 3; 978)
Note:		*p<0.1; **p<0.05; ***p<0.01

PREVALENCE AND INTENSITY OF OVERALL BELIEF IN CONSPIRACY THEORIES

In this research, a set of 48 statements about topics usually targeted by conspiratorial narratives (politics, technology, health and specifically Covid-19 pandemic and vaccines) was used to create an index of belief in conspiracy theories which shows the prevalence and intensity of such beliefs in the population.

The respondents whose mean index value was in the range of 1 to 2.5 are considered to have no or low such inclination (non-believers); respondents with index value of 2.51-3.50 could be considered to be "undecided" about these beliefs, while those with index value between 3.51 and 5 can be considered to strongly believe in conspiracy theories.

As the survey results show, the overall index is 3.07, slightly above the mid-point of a 1-5 response scale. This means that most of the people fall in the undecided category (47.41%), which means that they have neither agreed nor disagreed with most of the statements conveying conspiracy theories.

The percentage of those who show strong inclination towards such narratives is close, but somewhat higher than the percentage of the respondents who have mostly disagreed with the "conspiratorial" narratives presented in the survey, 28.53% and 24.05%, respectively.

Group (median agreement with conspiratorial claims)	Percentage of the sample
Non-believers (1-2.5)	24.05%
Undecided (2.51-3.5)	47.41%
Believers (3.51-5)	28.53%
Total (1-5)	*100%*

Table 6: Overall belief in conspiracy theories

While there are some demographic differences, the overall belief in conspiracy theories seems to be relatively evenly distributed throughout the sample. Compared to their presence in the entire sample, women are overrepresented in the "undecided" group. They are less present in the groups of "believers" and "non-believers" in conspiracy theories, the latter being well below their average participation in the sample. Women make up for 51% of the sample, but less than 46% of those expressing strong beliefs in conspiracy theories and more than 56% of the "undecided" group.

With men it is the other way around - they are underrepresented among the undecided and seem to be gravitating more towards believing conspiracy theories: men make up for 49% of the sample, but over 54% of the "believers" group.

	Women	Men	18 - 24	25 - 34	35 - 44	45-54	55 +	College educated	Not college educated	Rural	Urban
Non-believers	47.49%	52.51%	17.48%	23.47%	25.31%	18.06%	15.69%	19.03%	80.97%	45.23%	54.77%
Undecided	56.32%	43.68%	16.80%	16.88%	32.36%	16.90%	17.06%	13.16%	86.84%	53.28%	46.72%
Believers	45.62%	54.38%	11.09%	17.78%	31.05%	21.13%	18.96%	11.78%	88.22%	55.03%	44.97%
Participation in total sample	**51.10%**	**48.90%**	**15.30%**	**18.70%**	**30.30%**	**18.40%**	**17.30%**	**15%**	**83.40%**	**50.80%**	**48.20%**

Table 7: Belief in conspiracy theories: Demographic breakdown

Distribution of answers to individual questions on conspiracy theories shows that women are more often undecided and/or do not hold strong opinions on conspiracy theories aiming to offer large-scale "explanations" of political events, while men express similar indecisiveness about conspiracy theories more related to the sphere of personal health and wellbeing.[82]

The inclination to believe in conspiracy theories rises proportional to age - the youngest groups are underrepresented in the "believers" and overrepresented in the "non-believers" categories. This distribution goes in the opposite direction with older age groups.

College education also looks like a consistent predictor of the intensity of belief in conspiracy theories. Respondents with college education make up for 15% of the sample, but 19% of the non-believers group and are underrepresented in the undecided and believers groups (13% and 12% respectively).

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[82] Additional data and more detailed research results are available upon request (to be sent at info@zastone.ba) at:
https://drive.google.com/drive/folders/1GxT9hCNkV74aQ5r08gGONDel6zEKR1Uh

The respondents without college degrees (83.40% of the sample) show a reverse trend, as they are underrepresented in the first, and overrepresented in the second and third group. Similar trends are visible in the positioning of rural (presence rising from low to high inclination to believe in conspiracy theories) and urban population (presence dropping from low to high inclination to believe in conspiracy theories).

PREVALENCE AND INTENSITY OF BELIEF IN DIFFERENT CONSPIRATORIAL NARRATIVES

There are some exceptions in the distribution of different demographics when specific topics of conspiracy theories are taken into account. Conspiracy theories about **Covid-19 vaccines** are less believed by the older age groups than other conspiracy theories, younger age groups appear to be more "undecided" about them and the mid-age group shows more inclination towards believing in these compared to other conspiracy theories. The participation of the college educated participants in the non-believer group is slightly lower compared to other conspiracy theories.

	Women	Men	18 - 24	25 - 34	35 - 44	45 - 54	55 +	College educated	Not college educated	Rural	Urban
Non-believers	48.81%	51.19%	19.03%	15.88%	28.34%	19.12%	17.63%	17.01%	82.99%	47.52%	52.48%
Undecided	54.87%	45.13%	14.87%	19.88%	28.72%	18.56%	17.96%	13.02%	86.98%	55.37%	44.63%
Believers	50.43%	49.57%	11.61%	17.13%	35.52%	17.85%	17.89%	11.66%	88.34%	54.22%	45.78%
Participation in total sample	**51.10%**	**48.90%**	**15.30%**	**18.70%**	**30.30%**	**18.40%**	**17.30%**	**15%**	**83.4%**	**50.80%**	**48.20%**

Table 8: Belief in conspiracy theories about Covid-19 vaccines

The most distinct differences and biggest oscillations are found between several demographics when it comes to conspiracy theories with an antisemitic undertext. These are mostly claims of secret control over important events exerted either by specific people or families of Jewish origin, or described in general statements about "Jews secretly ruling the world" (with considerable differences in the level of agreement, depending on the specific claim[83]).

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[83] For example, partial or full agreement was on average 43% for the statements that "people like George Soros dictate the policies of many world governments" or "Families like Rockefeller and Rothschild control world affairs from the shadows", while partial or full disagreement with these statements was about 18%. However, most of the participants (63.3%) disagreed with the statement that "The Holocaust (Nazi genocide of Jews) is exaggerated", while 15.3% agreed with it (10.8% partially and only 4.5% fully).

This sub-category of politically themed conspiratorial statements is the only one where support from men is considerably higher than that from women, with men making up **61.73%** of the group that agrees with antisemitic conspiracy theories. The oldest group is most overrepresented in the believers group for this type of claims (over 23%, compared to their 17.30% participation in the whole sample).

College educated people are also more likely to believe in these than in other conspiracy theories, appearing in the lowest percentage among the non-believers and the highest among the believers group, when compared to other types of conspiratorial narratives. On the other hand, these are conspiracy theories that are the least likely to be believed by participants without college education. A similar reverse trend is present in the representation of rural and urban populations in this type of conspiratorial narratives.

	Women	Men	18 - 24	25 - 34	35 - 44	45 - 54	55 +	College educated	Not college educated	Rural	Urban
Non-believers	53.94%	46.06%	18.87%	23.30%	28.64%	10.65%	18.54%	13.31%	86.69%	49.08%	50.92%
Undecided	57.69%	42.31%	16.03%	17.94%	31.70%	19.94%	14.38%	14.79%	85.21%	51.92%	48.08%
Believers	38.27%	61.73%	10.59%	16.60%	28.58%	20.90%	23.33%	12.23%	87.77%	54.16%	45.84%
Participation in total sample	**51.10%**	**48.90%**	**15.30%**	**18.70%**	**30.30%**	**18.40%**	**17.30%**	**15%**	**83.40%**	**50.80%**	**48.20%**

Table 9: Belief in conspiracy theories with elements of antisemitism

BELIEF IN CONSPIRACY THEORIES BY NARRATIVE TOPIC

The highest index value was established for the statements with elements of conspiracy theories about health (excluding Covid-19). The value of 3.21 places this category slightly over the midpoint of the scale (neither agree nor disagree), but it still shows that the participants were most likely to agree with the conspiratorial statements related to health.

This is followed by "politics" (3.14) and "vaccines against Covid-19" (3.09 - it is, however, important to note that only two statements explicitly mention these vaccines). Statements with elements of antisemitism have an average of 3.02 and are followed by those about technology, with the average of 2.91. The lowest tendency of agreement with conspiratorial statements is found in the 14 statements with elements of the "Covid-19 pandemic" topic, with the average at 2.80. The difference between the mean values of health conspiracy theories index and the pandemic conspiracy theories index is statistically significant as determined by the Welch Two Sample Weighted T-test $t(1984) = 10.38$, $p < .001$.

The research has established that there is a negative correlation between each of these categories and the vaccination status of the respondents, meaning that the more likely a person is to be vaccinated, the less likely they are to believe in any category of conspiracy theories. The highest correlations with vaccination status were between conspiracy theory indices for Covid-19 vaccines and health topics (-0.35 for both). A slightly lower negative correlation with the vaccination status was found only in the subcategory "antisemitism" (-0.16).

ANTIVACCINATION CONSPIRACY THEORIES AND IMPACT ON BEHAVIOR

Respondents were asked whether they were vaccinated against Covid-19. Majority (53.2%) of the respondents said that they received Covid-19 vaccine, 42.7% said that they had not and 4.1% refused to answer.

Vaccination rate among participants coming from different parts of the country varies slightly, from 54% in Brčko District and Republika Srpska to 53.3% in the Federation of Bosnia and Herzegovina. In FBiH, 42.8% of participants were unvaccinated; 41.6% in Republika Srpska and 39.9% in Brčko District. In Brčko District there was the highest percentage of those who did not want to answer this question, 6.1%, followed by Republika Srpska with 4.4% and FBiH with 3.9% of participants.

These findings are significantly different from the official vaccination rates, which, at the time the survey was conducted, were estimated at about 20%. The discrepancy between the official immunization rates and the percentages obtained through this research on a representative sample can be explained by several factors, primarily by the fact that the official statistics uses the outdated (and itself heavily disputed) data from the 2013 census.

Since then, the population number is estimated to have significantly reduced, mostly due to substantial migrations from BiH. Additionally, there is no record of the number of people who were vaccinated in the neighboring countries of Serbia and Croatia before vaccines became widely available in BiH and it cannot be estimated how many of them were registered as vaccinated by the local authorities in BiH.

Respondents who said that they were not vaccinated against Covid-19 (435) were asked whether they were planning to get the vaccine, to which 16.1% (6.9% of the entire sample) said that they intend to get the vaccine, 41.5% (17.7% of the entire sample) said that they are not planning to get vaccinated, while 42.3% (18.1% of the entire sample) answered either with "maybe" or "don't know/not sure".

Are you planning to get vaccinated?	Total (435)	Percentage
Yes	70	16.1%
No	180	41.5%
Maybe	135	31%
I don't know/I'm not sure	49	11.3%

Table 10: Vaccination status

Answers to the question about the intention to get vaccinated, which was prompted to respondents who were not vaccinated, were fairly consistent in the Federation of Bosnia and Herzegovina and Republika Srpska. Namely, in FBiH, 42% of those respondents do not plan on getting immunized, 29.9% will perhaps get the jab, 15.2% consider getting immunized while 12.8% of respondents were uncertain. In Republika Srpska, 42.6% of respondents do not plan on getting a Covid-19 shot, 32.6% would perhaps get vaccinated, 18.3% will take a shot while 6.6% of respondents were uncertain.

In comparison to Federation and Republika Srpska, respondents from Brčko District were significantly more uncertain about the plan on getting the Covid-19 vaccine (29.8%). 36.7% of respondents from this administrative unit would perhaps get vaccinated, 21.2% do not plan on getting the shot while 12.3% plan on getting immunized against Covid-19.

ATTITUDES AND BELIEFS ABOUT COVID-19 VACCINES

The respondents who said that they were not planning to get vaccinated (180, or 17.7% of the entire sample) got a follow-up multiple answer question about the reasons for not wanting to get vaccinated.

Why don't you want to get vaccinated against Covid-19?	Total (180)	Percentage
I'm afraid of the side effects	60	33.3%
I don't think the vaccines have been tested enough, or they are experimental	133	73.7%
I don't think there is enough information about the composition of vaccines	71	39.6%
I don't need it, I'm not afraid of viruses	21	11.6%
I don't need it, I already had Covid-19	16	8.7%
I don't think vaccines are effective	67	36.9%

Table 11: Concerns about Covid-19 vaccine

The majority of the respondents who do not plan to get vaccinated (73.7%) said that they think Covid-19 vaccines are not tested enough and/or that they are "experimental vaccines".

Significant number of respondents (39.6%) answered that they do not think there is enough information about the composition of vaccines, 33.3% said they were afraid of the side effects, 36.9% said that they do not think vaccines are effective, 11.6% said that they do not need the vaccine, that they are not afraid of viruses, 8.7% said that they do not need it because they already had Covid-19.

A minuscule percentage of the respondents (3.2%) marked "other" as their answer, which suggests that answers offered in the survey, based on the content commonly debunked by fact-checking platforms, accurately predicted most reasons for refusing the vaccine against Covid-19 and that online misinformation is closely related to the misconceptions people harbor about vaccines.

The 365 unvaccinated respondents who answered the question "Are you planning to get vaccinated?" with "no" or "maybe",, were prompted a multi-answer question about a possible scenario in which they would get vaccinated against Covid-19. A significant percentage of these respondents (36.1%) said that they would get vaccinated if they saw that there are no negative consequences for those who did receive the vaccine. These respondents make up 12.9% of the total sample.

Mandatory vaccination was selected as an answer by 30.8% of respondents (11% of the total sample), while 21.3% (7.7% of the total sample) said that they would get vaccinated if they needed a certificate to travel or enter certain public spaces. A sudden increase in the number of Covid-19 cases was named as a reason to get vaccinated by only 1.8% of respondents, while 25.9% (9.2% of the total sample) answered that they wouldn't get vaccinated in any case.

For unvaccinated respondents who answered that they would get vaccinated if they saw that there were no negative consequences for vaccinated people, it can be assumed that they used that reasoning as an excuse, considering that the survey was conducted in late 2021, when it was already well known that serious adverse reactions to the vaccines are extremely rare.

In which case would you get vaccinated?	Total (365)	Percentage
If I see that there are no negative consequences for those who have been vaccinated	131	36.1%
If the vaccine was mandatory	112	30.8%
If I needed a certificate to travel or enter certain public spaces	78	21.3%
If there is a sudden increase in the number of infected persons	7	1.8%
Other	18	4.9%
I do not plan to get vaccinated in any case	94	25.9%

Table 12: Reconsidering vaccine refusal

Some gender differences were observed in the responses to this question. The motivation to get vaccinated for reasons not related to health is more present in women than in men. Considerably more women than men answered that they would get the vaccine if it becomes mandatory (38.7% and 22.3% respectively) and women are also more likely than men to get vaccinated in order to be able to travel or enter public spaces (25.4% and 16.9% respectively).

Almost twice as many men as women stated that they would not get vaccinated in any case (34.1% and 18.2% respectively).

In which case would you get vaccinated?	Total (365)	Percentage	Men	Women
If I see that there are no negative consequences for those who have been vaccinated	131	36.1%	38.3%	34%
If the vaccine was mandatory	112	30.8%	22.3%	38.7%
If I needed a certificate to travel or enter certain public spaces	78	21.3%	16.9%	25.4%
If there is a sudden increase in the number of infected persons	7	1.8%	3.2%	0.6%
Other	18	4.9%	5.1%	4.8%
I do not plan to get vaccinated in any case	94	25.9%	34.1%	18.2%

Table 13: Reconsidering vaccine refusal [84]

Looking into the age groups, the largest percentage of respondents aged 18-24 (42%) and 45-54 (39.7%) say they would get the Covid-19 vaccine if it becomes mandatory. On the other hand, mandatory vaccination was named as the reason for getting the vaccine by only 21.2% of the respondents aged 35-44. The respondents aged 35-44 (40.5%) were most likely to say that they would get the vaccine if they saw that there are no negative consequences for those who did receive the vaccine (however, this was a similarly frequent response in other age groups as well, with the exception of 45-54 age group).

In which case would you get vaccinated?	Total (365)	Total (100%)	18 - 24	25 - 34	35 - 44	45 - 54	55+
If I see that there are no negative consequences for those who have been vaccinated	131	36.1%	37.3%	38.8%	40.5%	20.5%	32.4%
If the vaccine was mandatory	112	30.8%	42%	35.1%	21.2%	39.7%	17.7%
If I needed a certificate to travel or enter certain public spaces	78	21.3%	26%	25%	14.3%	25.4%	19.8%
If there is a sudden increase in the number of infected persons	7	1.8%	5.6%	2.2%	0.5%	0	0
Other	18	4.9%	5.6%	2.4%	6.7%	6.5%	2.2%
I do not plan to get vaccinated in any case	94	25.9%	20.8%	23.2%	27.1%	29.4%	34.2%

Table 14: Reconsidering vaccine refusal (age breakdown)

When it comes to the education of the respondents, there were no significant statistical differences between the three groups. The answer "other" was the only exception, being considerably more frequent in the participants with elementary education; while none of them opted for travel or entering public spaces as a potential reason for vaccination against Covid-19. However, the percentage of people with elementary education in the sample was very low, at only 1.8%.

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[84] For the color code of the tables, see Addendum in this report.

In which case would you get vaccinated?	Total (365)	Percentage	Elementary	High school	College
If I see that there are no negative consequences for those who have been vaccinated	131	36.1%	19.7%	34%	34%
If the vaccine was mandatory	112	30.8%	50.5%	38.7%	38.7%
If I needed a certificate to travel or enter certain public spaces	78	21.3%	0	25.4%	25.4%
If there is a sudden increase in the number of infected persons	7	1.8%	19.7	0.6%	0.6%
Other	18	4.9%	35.5	4.8%	4.8%
I do not plan to get vaccinated in any case	94	25.9%	14%	18.2%	18.2%

Table 15: Reconsidering vaccine refusal (education breakdown)

The respondents were also asked to evaluate the Covid-19 vaccines on a scale from being entirely harmful to being entirely useful, taking into account two main attributes used to form an opinion about vaccines: the question of safety, or the risk that they may cause harm; and the question of efficacy, or the trust that they will deliver protection against the given disease.

Majority of the respondents (59.8%) answered that the vaccines are primarily useful, with 37.2% answering that they are more useful than harmful (a dominant response in the sample) and 22.6% that they're a useful protection against Covid-19 and aren't harmful at all. Claims that vaccines are either predominantly or entirely harmful were supported by 20.1% overall, while the same percentage of the respondents were unsure of how to answer.

In other words, about 20% are undecided about whether vaccination brings more risks or benefits, while about 14% of those who see it as more harmful than useful do have some trust in its efficacy, but are more afraid of the potential risks than they are considering its benefits. Only 6.2% expressed an entirely negative attitude which signals complete unwillingness to consider the benefits of vaccination.

People have mixed opinions on the benefits or harms of Covid-19 vaccines. What do you think about this?	Total (1018)	Percentage
Vaccines are harmful, and they are not useful	64	6.2%
Vaccines do more harm than good	142	13.9%
Vaccines are helpful rather than harmful	378	37.2%
Vaccines are a helpful protection against Covid-19, and they are not harmful	230	22.6%
I don't know/I'm not sure	204	20.1%

Table 16: Attitudes about Covid-19 vaccines

The percentage of respondents who answered that they would not get vaccinated in any case is 9.2% of the total sample, while 6.2% of respondents said that vaccines were entirely harmful and not useful at all. There is an overlap of these two answers in 3.2% of the total sample (people who stated that they do not intend to get vaccinated and that vaccines are only harmful), which may be the percentage of the sample which is irreversibly opposed to vaccination.

When the number of people who said that they would not get vaccinated in any case is compared to those who described vaccines as mostly or entirely harmful (answers 1 and 2 on the scale), there is an overlap of 7.2% of the sample, indicating that this is the percentage that is very unlikely to change their attitudes on vaccines.

MISCONCEPTIONS ABOUT THE COVID-19 VACCINES

The 365 unvaccinated respondents who did not indicate they are planning to get the vaccine were given a series of incorrect claims about the vaccines that were taken from the most common conspiracy theories and disinformation narratives targeting the Covid-19 vaccines. The respondents were asked to evaluate how well-founded each of these claims are on a scale from not agreeing at all to agreeing completely.

Majority of the respondents who said they do not plan to get vaccinated (54.4%) have either somewhat or completely agreed that Covid vaccines cause infertility, while 59.4% agreed that they can jeopardize pregnancy.

How well-founded are these claims about Covid-19 vaccines?	Vaccines can cause infertility	Vaccines can jeopardize pregnancy
I strongly disagree	**2.8%**	**4.4%**
I disagree	**5.5%**	**4.7%**
I neither agree nor disagree	**15.4%**	**12.6%**
I agree	**30%**	**31.5%**
I strongly agree	**24.4%**	**27.9%**
I don't know/I'm not sure	**21.8%**	**18.8%**
Total (365)		

Table 17: Misconceptions about Covid-19 vaccines reproductive risks

The same group of respondents was asked whether they believe that vaccines cause either neurological, autoimmune, cardiovascular or malignant diseases. On average, the majority (55%) either somewhat or completely agrees that vaccines can cause some of these illnesses.

Over 60% of respondents agreed to some level that vaccines can cause cardiovascular diseases, 55% said the same about neurological diseases, 54% about the autoimmune diseases, while 45.7% agreed that they can cause malignancies.

How well-founded are these claims about Covid-19 vaccines?	Vaccines can cause neurological disease	Vaccines can cause autoimmune disease	Vaccines can cause cardiovascular disease	Vaccines can cause malignant disease
I strongly disagree	1.6%	2.4%	1.3%	2.6%
I disagree	5.3%	6.7%	6.6%	4.9%
I neither agree nor disagree	17.4%	18.7%	12.5%	19.8%
I agree	31.4%	29.2%	34.7%	25.6%
I strongly agree	23.6%	25.1%	29.8%	20.1%
I don't know/I'm not sure	20.7%	17.9%	15.2%	27%
Total (365)				

Table 18: Misconceptions about Covid-19 vaccines health risks

The same group was also prompted some of the highly unrealistic conspiracy theories which have been circulating online and asked to answer whether they think vaccines contain microchips, graphene oxide, parasites, dangerous nanoparticles or cells of aborted fetuses, as well as whether they think vaccines based on mRNA technology can alter DNA. The level of agreement with these more outlandish claims was considerably lower than with those described above. There is, however, a high percentage of people who aren't certain whether these claims are true.

On average, 18.4% either somewhat or completely disagreed with some of these claims, 46.9% were uncertain and 34.7% respondents either somewhat or completely agreed with some of these claims. When looked into individually, the claim that vaccines contain "dangerous nanoparticles" has received the highest percentage of agreement (49.3%), followed by a claim that mRNA-based vaccines can "alter DNA" (38.1%)

How well-founded are these claims about Covid-19 vaccines?	Vaccines based on mRNA technology can alter DNA	Vaccines may contain microchips	Graphene oxide may be present in vaccines	Vaccines can contain parasites	Vaccines can contain dangerous nanoparticles	Vaccines may contain cells of aborted fetuses
I strongly disagree	7.6%	29.7%	4.2%	11.4%	3.1%	13.5%
I disagree	7.8%	7.3%	4.2%	8.9%	6.1%	6.3%
I neither agree nor disagree	14.9%	15.4%	21.4%	20.9%	15.9%	16.6%
I agree	22.7%	15.7%	17.3%	17.9%	25.8%	17.7%
I strongly agree	15.4%	13.3%	13.2%	12.5%	23.5%	13.3%
I don't know/I'm not sure	31.6%	18.6%	39.7%	28.4%	25.6%	32.6%
Total (365)						

Table 19: Misconceptions about Covid-19 vaccines ingredients

The antivaccination narratives and conspiracy theories about vaccines, especially the MMR (measles, mumps and rubella) vaccine, have been present before the pandemic. The level of agreement with these narratives was also probed, and found to be considerably lower than with those targeting Covid-19 vaccines. Almost a quarter (23.3%) of the population agreed with the anti-MMR narrative, but an additional 20.7% are not sure whether such claims are true.

The respondents were asked about their opinion regarding the suspicions about the measles, mumps and rubella vaccine (MMR vaccine) possibly leading to autism and other health problems. Most of the respondents, 56% of them, said they thought that such suspicions are mostly or completely unfounded. On the other hand, 17.8% of the respondents said they find such suspicions mostly well-founded, and 5.5% said they believe the suspicions are completely well-founded.

The respondents who supported suspicions about the MMR vaccine possibly leading to autism and other health problems (238 respondents) were asked the multiple answer question why they think this vaccine is mandatory for children in Bosnia and Herzegovina if it is harmful. Most of the respondents (49.9%) said they think it is due to the lobbying of the pharmaceutical industry and 34.8% of the respondents said they think that there are more profound, hidden reasons behind the vaccine mandate. The third most common answer, selected by 23.9% of the respondents, was that our healthcare system does not take into account the welfare of children. 21.5% of the respondents said they think the reason for the mandate is the fact that our healthcare system does not keep pace with modern scientific knowledge.

COVID-19 CONSPIRACY THEORIES

One of the most widespread and most persistent conspiracy theories about the Covid-19 pandemic is that the SARS-CoV-2 virus was intentionally released or, in some versions, that it was artificially created and has "escaped from the lab".[85] This claim was used to examine how pervasive the narrative of a "planted virus" is, which actors are seen as possible perpetrators and what motives are attributed to them by respondents who believe that the virus was intentionally released.

The respondents were asked to assess the probability of this claim on a scale from not likely at all to definitely true. More than a half of all respondents agreed (60.2%), out of which 41.6% answered that it was very likely and 18.6% answered that it was definitely true. The claim that it was not at all likely was supported by only 5.4% of respondents and 23.3% of respondents answered that it is not very likely to be true.

There were no significant differences in the answers between respondents with different levels of education, except with those with only elementary education, who are more prone to entirely agreeing with it (30.6%, compared to 19.0% high-school and 15.0% college educated). There were almost no differences between genders in the answers to this question.

When it comes to vaccination status, 36.5% of vaccinated respondents disagreed with the claim, out of which 7.5% completely. In comparison, 20.7% non-vaccinated respondents have disagreed with the same claim, out of which 3.2% completely.

Vaccinated respondents were twice as likely to be uncertain about the answer to this question as the non-vaccinated (13.8% compared to 5.8%). An overwhelming majority of the unvaccinated respondents (73.5%) supported the claim the virus was deliberately released (45.2%: very likely, 28.3%: definitely true), compared to almost half of the vaccinated (49.8%).

None of the respondents who refused to answer whether they were vaccinated had fully disagreed with this claim, more than a half (57.4%) have supported it, while a third of them (33.2%) answered they were not sure whether the virus was intentionally released.

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[85] Krupalija et al. (2020). *Disinformation During Covid-19*, 22

Some believe that the coronavirus was intentionally released into the population.	Total (1018)	Vaccinated (540)	Not vaccinated (434)	Doesn't want to answer (44)
That is not likely at all	**5.4%**	**7.5%**	**3.2%**	**0**
That is not very likely	**23.3%**	**29%**	**17.5%**	**9.5%**
That is very likely	**41.6%**	**39.5%**	**45.2%**	**31%**
That is definitely the truth	**18.6%**	**10.3%**	**28.3%**	**26.4%**
I don't know/I'm not sure	**11.2%**	**13.8%**	**5.8%**	**33.2%**

Table 20: Misbeliefs about the origin of SARS-CoV-2

The respondents who expressed a certain degree of belief in the possibility that the Sars-CoV-2 virus was intentionally released in the population (727 of them) were given a multiple answer question to indicate all the actors which might be responsible for the intentional release. The answers were selected based on the actors which have appeared as "culprits" in various versions of this narrative that have been debunked by regional fact-checkers in the past two years.

Most of the respondents think that either "a group of very powerful people who decide on everything" (39.5%) or the pharmaceutical industry (39.1%) are responsible for virus release.   Around a quarter of the participants believe that "several world governments who are in agreement", or the USA, are responsible for the release, while China falls slightly below that. 18.9% of those who believe that virus was released intentionally were not certain about who is responsible for the leak.

There are some differences between the genders in the responses to this question. More men perceive the pharmaceutical industry as responsible, while women believe more that powerful people are responsible for releasing the virus into the population. The biggest gap is found in the answer stating that Great Britain was responsible for the pandemic, where 2.5 times more men than women selected that option. Female participants were much more reluctant to choose actors from the list than men (23.8% of women chose options "I don't know/ I'm not sure", compared to 13.4% of men). There were no significant differences in these beliefs between the age groups.

Interestingly, among those who believe that release of virus was intentional and are vaccinated, 38.9% believe that pharmaceutical industry is behind the plot, while 44.2% of unvaccinated participants believe it is powerful people to be called out.

If the virus was intentionally released, who could be responsible for such a thing, in your opinion?	Total		Men	Women	Vaccinated	Not vaccinated	Doesn't want to answer
A group of very powerful people who decide on everything	287	39.5%	42.2%	37.1%	36.7%	44.2%	22.7%
Pharmaceutical industry	284	39.1%	43.7%	35.2%	38.9%	41.9%	15.8%
Several world governments who are in agreement	191	26.3%	30.8%	22.4%	24.6%	30.3%	6.1%
USA	181	24.9%	28.8%	21.5%	20.9%	29%	23.7%
China	161	22.2%	25%	19.8%	23.9%	21.5%	12.9%
I don't know/ I'm not sure	137	18.9%	13.4%	23.8%	21.5%	13.7%	43.2%
Bill Gates	74	10.2%	9.6%	10.7%	9.3%	11.3%	7.8%
Great Britain	57	7.8%	11.4%	4.6%	7.9%	7.6%	7.8%
Someone else	10	1.3%	2.1%	0.6%	1%	1.8%	
Total	727	100%					

Table 21: Misbeliefs about the origin of SARS-CoV-2

The answer to this question was also compared to the question about how much trust the participants have in different Covid-19 vaccines available in BiH (specifically, how reliable they find them). The answers of the participants who selected one of the five most represented answers (pharmaceutical industry, a group of powerful people who decide on everything, several world governments, USA, and China), were compared to their trust in each of Covid-19 vaccines which were available in BiH (AstraZeneca, Johnson & Johnson, Moderna, Pfizer, Sinovac, Sinopharm, Sputnik).

No significant correlations were identified in this comparison. The trust in Johnson & Johnson and AstraZeneca vaccines were the lowest, but it is questionable if those attitudes were specifically impacted by conspiratorial narratives given that mRNA vaccines (Pfizer and Moderna) were the ones most targeted by such narratives (however, these two vaccines were still rated as most reliable by the respondents).

It is more likely that this result is due to extensive media coverage on the side-effects of these vaccines [86] which, in the case of AstraZeneca, eventually led to several countries temporarily pausing their administration for safety concerns - a development which was also extensively covered in local press at a time when this vaccine was one of the most available in the region.[87]

Respondents who supported the claims of the virus being released intentionally or were not sure (727), were also given a multiple answer question about what could be the motives for releasing the virus into the population.

The majority of the respondents (56.4%) answered that it was the pursuit of someone's economic interests that was the motive, 49.1% said that it was to sell vaccines and medications and 53.2% named reducing the number of people on the planet as a motive. Testing of 5G technology was named as a motive by 10.6% of the respondents, while 42.9% named bringing the population under control under the pretext of anti-pandemic measures as a motive.

[86] *Vaxzevria (previously COVID-19 Vaccine AstraZeneca)*. European Medicines Agency. (n.d.) Accessed February 15, 2022, from https://www.ema.europa.eu/en/medicines/human/EPAR/vaxzevria-previously-covid-19-vaccine-astrazeneca#safety-updates-section, *COVID-19 Vaccine Janssen*. European Medicines Agency. (n.d.) Accessed February 15, 2022, from https://www.ema.europa.eu/en/medicines/human/EPAR/covid-19-vaccine-janssen#safety-updates-section

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[87] *Al Jazeera Balkans*, "Osam evropskih zemalja suspendiralo AstraZeneca vakcine," March 11, 2021. https://balkans.aljazeera.net/news/world/2021/3/11/sest-zemlja-eu-a-suspedovalo-vakcine-astarazenace (accessed February 14, 2022).

What could be the motives for releasing the virus into the human population?	Total (727)	Percentage
Someone's economic interests	410	56.4%
To reduce the number of people on the planet	387	53.2%
To sell vaccines and medications	356	49.1%
To bring the population under control under the pretext of anti-pandemic measures	312	42.9%
To test 5G technology	77	10.6%
Something else	31	4.3%

Table 22: Misbeliefs about the origin of SARS-CoV-2

A small percentage (4.3%) marked "something else" as their answer. Once again, this small percentage shows that survey questions based on data of regional fact-checkers on widely spread conspiracy theories accurately predicted what respondents could see as motives behind supposed intentional releasing of the virus into the public.

SOURCES OF INFORMATION ON COVID-19 VACCINES AND THE PANDEMIC

The respondents were asked to rank how often they use different sources of information about the two topics severely affected by disinformation and conspiracy theories: Covid-19 pandemic and vaccines against Covid-19. They were asked how often they get information on television or radio, in the press, on the internet/online, at their doctor's office, from professional/scholarly literature, from people around them (acquaintances, friends, family) and from "other" sources. They were offered a choice of media sources (television/radio, press, internet and/or online media, professional/scholarly literature) and direct sources of information (their doctor, people close to them). The frequency of use of different sources was ranked on a five-point scale, ranging from "never" to "always".

The most frequently used source of information about Covid-19 vaccines was the internet, with 40.4% of the respondents stating they use it very often or always. Nearly one third of the respondents said they very often or always get the information about vaccines from their doctor's office (31.6%) and professional/scholarly literature (31.5%), while 26.3% gave the same answers about television or radio.

Where do you get information about the Covid-19 vaccines?	On television or radio	In the press	Online	At my doctor's office	Professional & scholarly literature	From people around me (acquaintances, friends, family)	Other
Never	12.6%	20.4%	9.2%	13.8%	14%	11.7%	34.8%
Rarely	19.4%	24.2%	13.3%	21.2%	21.8%	24.8%	21.7%
Sometimes	41.7%	40.6%	37%	33.4%	32.6%	40.8%	35.3%
Often	21.7%	12.5%	32.5%	23.1%	24.7%	19%	5.5%
Always	4.6%	2.2%	7.9%	8.5%	6.8%	3.7%	2.7%

Table 23: Sources of information about Covid-19 vaccines

The most commonly used source of information about the Covid-19 pandemic was also the internet, with 43.3% of the respondents stating they use it very often or always. The second most common source of information was television or radio, with 28.2% of the respondents stating that they use one of those very often or always. 25.2% of the respondents stated they very often or always get the information about the pandemic from their doctor's office, and about 24% said the same about professional/scholarly literature and the people from their surroundings.[88]

Where do you get information about the Covid-19 pandemic?	On television or radio	In the press	Online	At my doctor's office	Professional & scholarly literature	From people around me (acquaintances, friends, family)	Other
Never	9.1%	20.1%	6.1%	15%	16.7%	8.8%	37.5%
Rarely	20.2%	24.3%	12.3%	23.5%	24.3%	22.3%	22.4%
Sometimes	42.5%	39.5%	38.3%	36.2%	35.3%	45%	33.2%
Often	24.6%	14.1%	36.6%	18.4%	18.4%	20.7%	4.8%
Always	3.6%	2.1%	6.7%	6.8%	5.3%	3.3%	2.1%

Table 24: Sources of information about Covid-19 pandemic

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[88] The high percentage of respondents answering that they use scholarly literature to get informed on these topics may be a result of the differences in understanding of the term.

ONLINE SOURCES OF INFORMATION

The respondents who answered that they very often or always get information about these topics on the internet were asked to specify which of the following online sources they use most frequently: news media websites, foreign news media websites, blogs or forums, health institutions in FBiH/RS, Twitter, Facebook, YouTube, chat apps like Viber and WhatsApp and "other".

When it comes to information about vaccines, 30% said they mostly get it on the news media websites, 21.9% said they get it from web pages of health institutions in FBiH/RS, while 18.6% said they get their information on Facebook. The fifth most common answer, chosen by 16.5% of respondents, was "websites of foreign news media".

Where on the Internet do you most often find useful information about vaccines?	Total (412)	Percentage
News media websites	123	30%
Foreign news media websites	68	16.5%
Blogs or forums	27	6.5%
Websites of health institutions in FBiH/RS	90	21.9%
Twitter	3	0.6%
Facebook (posts on profiles, groups; users' comments)	76	18.6%
Chat apps like Viber and WhatsApp	1	0.3%
YouTube	15	3.6%
Somewhere else	9	2.1%

Table 25: Online sources of information about Covid-19 vaccines

Distribution of online sources about Covid-19 pandemic was similar: 33.1% said they prefer news media websites, 20.9% of respondents said they get their information from

web pages of health institutions in FBiH/RS; 19.7 % said they get their information from profiles, pages and groups on Facebook, while 15.1% of respondents said they use foreign news media websites. When it comes to social networks, other platforms do not come close to Facebook as sources of information about the Covid-19 vaccines (YouTube 3.6%, Twitter 0.6%, chat applications 0.3%), or the pandemic (YouTube 2.7%, Twitter 0.1%, chat applications 0.0%).

Where on the Internet do you most often find useful information about the Covid-19 pandemic?	Total (440)	Percentage
News media websites	146	33.1%
Foreign news media websites	66	15.1%
Blogs or forums	24	5.5%
Websites of health institutions in FBiH/RS	92	20.9%
Twitter	0	0.1%
Facebook (posts on profiles, groups; users' comments)	87	19.7%
Chat apps like Viber and WhatsApp	0	0
YouTube	12	2.7%
Somewhere else	13	2.9%

Table 26: Online sources of information about Covid-19 pandemic

There are some **gender differences** in the answers on most frequently used online sources, with men skewing more towards news media websites and women choosing Facebook more frequently. When it comes to information about the pandemic, 36.3% of men, compared to 29.9% of women, chose news websites, while 26.9% of women compared to 12.5% men chose Facebook.

On vaccines, the percentages are 38.8% (men) and 20.8% (women) for websites, but there is no significant difference in choosing Facebook (20.4% of women and 16.8% of men); however, much more women than men named websites of official health institutions as sources of information (30.2% compared to 13.9%).

Women are also more likely to say they "always" use their doctors as sources of information about the vaccines and the pandemic, with 2.92 average on a 1-5 scale, compared to 2.78 for men.

There were also some differences between the information sources used by the **vaccinated and unvaccinated** respondents. When it comes to the information about the pandemic, vaccinated respondents use television or radio more frequently than the unvaccinated: 23.1% of the vaccinated and 36.2% of the unvaccinated respondents said they "rarely or never" get their information there, while 31% of the vaccinated and 24.9% of the unvaccinated use them "very often or always". Information about Covid-19 vaccines are frequently sought on these sources by 29.8% of vaccinated and 23 % of unvaccinated respondents.

The Internet is used as a source of information about the Covid-19 pandemic by 47.7% of vaccinated and 38.9% of unvaccinated respondents, while information about vaccines is frequently sought online by 43.6% and 37.6% of them respectively. Vaccinated respondents also use news media websites (36.3% compared to 27.3%) and web pages of health institutions in FBiH/RS (23.7% compared to 15.9%) more frequently than the unvaccinated respondents as source of information about the pandemic. It is similar with information about Covid-19 vaccines, where 34.3% of vaccinated and 24.4% of unvaccinated (as well as 20.3% of those who refused to answer whether they got the vaccine) use news media websites as a source.

Facebook is the most popular online source of information about the vaccines for the unvaccinated respondents (25.2% compared to 14.7% of the vaccinated respondents) and it is their second ranking online source of information about the pandemic (24.7%, compared to 17.4% of the vaccinated). There is a stark difference in how often blogs and forums are used as sources of information about vaccines (9.8% of unvaccinated and only 3.8% of vaccinated) and about the pandemic (7.8% of the unvaccinated and 4.2% of the vaccinated respondents).

Twice as many vaccinated as the unvaccinated respondents said that they often or always get information about the pandemic from their doctors (33.1% and 17.1%, respectively) and they are also more likely to get information about Covid-19 vaccines from that source (40.5%, compared to 22.4% of the unvaccinated). Only 12.1% of respondents who refused to answer whether they are vaccinated against Covid-19 answered that they often or always use their doctors as a source of information about vaccines, while 37.2% said that they never or rarely do, compared to 45.5% of the unvaccinated and 26.4% of vaccinated respondents.

PUBLIC FIGURES AS SOURCES OF INFORMATION

Public figures have great potential to communicate on issues of wider public interest with their audiences and the general public, but also to do significant damage when their statements are not based on facts and evidence, or when they purposely spread false information. The study "Disinformation during Covid-29 pandemic" (2020) [89] identifies several types of actors whose public engagement has been particularly detrimental during the pandemic, including medical doctors who go beyond their expertise in commenting on issues related to the pandemic, experts who have gone "astray" and abandoned evidence-based approach in interpreting and commenting on pandemic-related subjects, but also people without medical or scientific background who actively engaged in "explaining" matters from the fields of epidemiology, virology, or immunology.

These types of information sources have been responsible for much of the dangerous disinformation and conspiracy theories about the pandemic, continuing into the second year of the pandemic when vaccines against Covid-19 became available. Many of them shifted their focus on that subject, stirring distrust in immunization against the disease.

We surveyed the trust in public figures as sources of information about the pandemic, to establish which personalities have left a mark in the general public when it comes to the messages they communicated during the pandemic. The respondents were asked to name a public figure that has given useful, understandable, and meaningful explanations for the issues and events related to the pandemic. The question had an additional instruction that any public person, from any domain of public life (politics, sports, entertainment, science, etc.) can be named as such a source. The question was not limited to the territory of BiH, so the "pool" from which to choose the answer was as large as the participants interpreted it themselves.

Most of the respondents - a total of 54.28% - did not name any person as a trustworthy and reasonable source of information about the pandemic. Out of the total sample, 22.94% said that nobody met that description, 20.94% said they did not know, while 10.40% gave an answer not related to any specific person ("other").

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[89] Krupalija, Rašid et al. (2020). *Disinformation During Covid-19*, 43.

Less than half of the respondents, 45.72%, named a public figure they deemed to be a trustworthy or useful source of information on the pandemic. A total of 115 people were named, but most names appear only once. The relatively low percentages of public figures who appear several times does not necessarily point to a conclusion that those figures had a low impact, given that they were the first choice in answering a question in an online survey with no predefined responses.

The overwhelming majority of the public figures named in the respondents' answers are men - 89.48%, compared to only 10.52% of women listed as trusted sources of information about the pandemic.

Public figures named by the respondents were sorted into 5 categories, based on their public record and the statements they gave in the past two years. These are their percentages in the total sample:

1. *Public figures who gave evidence-based statements on the pandemic: 38.05% of the public figures listed*

2. *Public figures who gave mixed statements (some evidence-based, some not): 13.11%*

3. *Public figures whose statements were unsupported or contradicted by evidence: 18.95%*

4. *Public figures who propagated conspiracy theories: 25.48%*

5. *Public figures who have not commented on the pandemic (or unknown): 4.41%*

Out of all the named public figures, 44.86% have background in fields related to science and medicine. Most of them fall into the category of public figures who gave evidence-based comments and this category itself is mostly populated by persons with health or science background (65.81% of public figures who gave evidence-based comments come from such fields). Interestingly, a little under a half of the public figures who propagated conspiracy theories (47.81%) also have health or science backgrounds, while the large majority of those who gave comments unsupported or contradicted by evidence (89.37%) have no background in health and science.

Out of those respondents who named a public figure they deemed to be a trustworthy or useful source of information, almost half (44.86%) named public figures with some health and/or science background.

Public figures from the realm of politics were named by 19.83 % of those respondents, followed by public figures from sports (13.88 %) and entertainment (movies, music, etc. - 8.53%). A smaller percentage of the respondents who named a specific person went for journalists and news media personalities (5.01%), academia (3.54 %), law (0.15%) and religious institutions (0.68%). Public figures whose professional or academic backgrounds are unrelated with the field they are publicly known for (i.e. persons without an expertise in the fields they are identified with in the general public) were named as a source of useful explanations of pandemic events by 3.50 % of the respondents who answered this question with a name.

The respondents who got vaccinated against Covid-19 chose public figures who gave evidence-based comments as trustworthy sources more frequently than the non-vaccinated (47.93% of the vaccinated compared to 28.13% of the unvaccinated respondents). The percentage of unvaccinated respondents who listed public figures who propagated conspiracy theories was twice as high as that of the vaccinated participants (34.62% and 16.87% respectively). Overall, more than a half of the respondents who did not get vaccinated against Covid-19 listed non-credible sources as useful and trustworthy (56.69%), while the vaccinated respondents listed them in less than a third of their responses (32.5%).

Public figures considered to have given "meaningful and useful" explanations about the pandemic	Vaccinated	Not vaccinated
Evidence-based comments	**47.93%**	**28.13%**
Comments unsupported or contradicted by evidence	**15.63%**	**22.07%**
Mixed comments (some evidence-based)	**14.81%**	**11%**
Propagated conspiracy theories	**16.87%**	**34.62%**
Haven't publicly commented or unknown	**4.76%**	**4.18%**

Table 27: Categories of public figures named by the participants

Medical professionals who spread pseudoscientific claims and sportsmen were among the most frequently mentioned public figures, "ranking" higher than leaders of public health institutions. However, some of the figures who represent official health institutions did find themselves relatively high on the list of trusted sources.

Alen Šeranić, the Minister of Health and Social Welfare of Republika Srpska,[90] was named by 4.31% of all the respondents as a relevant source. Šeranić is an epidemiologist by profession, who was praised for his consistent and calm approach to briefing the public in the early days of the pandemic. He was not known to have given any statements outside of the realm of evidence-based science and medicine.

A few other figures were also relatively frequently named by the respondents, all with less than 2% recognition, such as Goran Čerkez, Assistant Minister of Public Health in the BiH Federation entity [91] who usually communicated the entity government's decisions on anti-pandemic measures and vaccination efforts to the public (1.87%). Predrag Kon, an epidemiologist from Serbia and a member of the Covid-19 Crisis Group in that country,[92] was mentioned by 1.05% of the respondents.

The college educated respondents were moderately more inclined to name a public figure with background in health and science (49.76%) than the non-college educated respondents (44.02%), but the top choices for both groups were public figures who either gave baseless statements or spread conspiracy theories. However, overall, the college educated respondents were more inclined to name public figures who gave evidence-based comments during the pandemic (44.08%) than the non-college educated respondents (37.01%). One in five public figures named by the college educated respondents (20.30%) propagated conspiracy theories, while the percentage of such public figures named by the non-college educated respondents was larger (26.38%).

A significant number of the vaccinated respondents said that nobody communicated trustworthy or useful information about the pandemic (23.11%), one in five said they did not know (20.98%) and one in ten gave a response other than a name of a public figure (10.39%). The highest percentage (6.53%) of vaccinated respondents who did name a public figure chose Alen Šeranić as the most trusted source of information.

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[90] *Dr. Alen Šeranić, Minister of Health and Social Welfare of the Republic of Srpska*. Vlada RS. (n.d.) Accessed February 15, 2022, from
https://www.vladars.net/eng/vlada/ministries/MHSW/Structure%20of%20the%20Ministry/Minister%20(CV)/Pages/default.aspx

[91] Goran Čerkez's LinkedIn page, accessed February 15, 2022, https://www.linkedin.com/in/goran-%C4%8Derkez-00391828?originalSubdomain=ba

[92] *Predrag Kon*. Istinomer. (n.d.) Accessed February 15, 2022, from
https://www.istinomer.rs/akter/predrag-kon/

Most of the unvaccinated respondents also said "nobody" (21.53%), "don't know" (21.09%) or "other" (9.14%). As many as 7.44% named Branimir Nestorović, a pulmonologist from Serbia who was initially a member of Serbian government's Covid-19 Crisis Group, but became known for peddling pseudoscientific claims and conspiracy theories about the pandemic, with his false claims repeatedly debunked by most, if not all, fact-checkers in the region.[93]

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[93] Čeliković, Amina & Aldin Karahasanović. "Branimir Nestorović nastavlja dezinformisati o pandemiji Covid-19." *Raskrinkavanje*. February 9, 2021. https://raskrinkavanje.ba/analiza/branimir-nestorovic-nastavlja-dezinformisati-o-pandemiji-covid-19 (accessed February 15, 2022).
Fuka, Ivor. "Nošenje maski ne uzrokuje upalu pluća." *Faktograf*. December 9, 2020. https://faktograf.hr/2020/12/09/nosenje-maski-ne-uzrokuje-upalu-pluca/ (accessed February 15, 2022).
Jelena Jovović, "Neistina je da je paracetamol na listi kancerogenih supstanci," *Fake News Tragač*. February 1, 2020. https://fakenews.rs/2020/02/01/neistina-je-da-je-paracetamol-na-listi-kancerogenih-supstanci/ (accessed February 15, 2022).

Marija Ćosić & Emir Zulejhić, "Nestorovićeve dezinformacije o pandemiji ponovo na portalima iako se "ne mogu potvrditi u praksi"." *Raskrinkavanje*. May 8, 2021. https://raskrinkavanje.ba/analiza/nestoroviceve-dezinformacije-o-pandemiji-ponovo-na-portalima-iako-se-ne-mogu-potvrditi-u-praksi (accessed February 15, 2022).

TRUST IN INSTITUTIONS

Participants in the survey were asked to indicate how much trust they have in various social, political, state and commercial institutions. They were given a list of 26 specific government institutions and bodies, as well as different types of institutions and sectors: Council of Ministers of BiH, Presidency of BiH, FBiH/RS Government, Cantonal government (only for respondents from FBiH), BiH Parliamentary Assembly, FBiH Parliament, Republika Srpska National Assembly, Canton Assembly, parties in power, opposition parties, media, organized religion, healthcare system, school system, unions, courts, prosecutor's office, embassies, police, military, banks, insurance companies, shops/trading companies, European Commission, public administration, public broadcaster.

Participants were also prompted with specific, individual institutions from the health sector, including local health centers, local hospitals, three hospitals most significant for the pandemic response (two in Sarajevo and one in Banja Luka, listed by name), entities' health ministries, health institutes and Covid-19 crisis groups, as well as the World Health Organization.

The respondents were asked to indicate on a 4-point scale how much trust they have in various social and state institutions, ranging from "I don't trust it at all" to "I trust it completely".

Overall trust in the institutions, as has been established by previous research, is low. Only six of the institutions have a trust score above the midpoint (higher than 2 on a 4-point scale), with the school system ranking the highest (2.51), the police ranking 2.37 and the healthcare system ranking 2.37. The lowest average trust indicated was in the parties in power (1.77), meaning that most of the respondents indicated that they do not trust them.

INSTITUTION / AVERAGE SCORE
School system 2.51
Police 2.37
Healthcare system 2.37
Military 2.35
Organized religion 2.32
Embassies 2.22
Shops/trading companies 2.20
Banks 2.17
European Commission 2.15
Insurance companies 2.14
Unions 2.08
Public administration 2.06
Courts 2.05
Media 2.01
Cantonal government 1.97
Prosecutor's office 1.98
Public broadcaster 1.98
Canton Assembly 1.95
National Assembly of RS 1.97
Opposition parties 1.91
FBiH Parliament 1.87
Entity Government 1.86
BiH Parliamentary Assembly 1.86
Presidency of BiH 1.84
Council of Ministers of BiH 1.83
Parties in power 1.77

Table 28: Trust in institutions

There were no significant gender differences between female and male respondents for most of the institutions. Both women and men indicated that they trust the school system the most (2.52 and 2.50 respectively) and the score for parties in power was also the lowest for both genders (1.79 for men and 1.75 for women). Most of the age groups also indicated the highest trust in the school system, with the respondents aged 18 to 24 equally trusting the school system and the military (2.57) The age group 45-54 is the only exception, with the highest trust in the police (2.54). The lowest trust indicated by the respondents aged 18 to 24 was in the Presidency of BiH (1.91). All the other age groups indicated the lowest trust in the parties in power.

CORRELATIONS OF TRUST IN INSTITUTIONS WITH BELIEFS AND BEHAVIOR CHOICES

The correlation between the level of trust in different institutions and indicators of belief in conspiracy theories has been examined.

The comparisons made were the following:

o A correlation between the level of trust in institutions and overall belief in conspiracy theories. Answers to the 48 short statements conveying conspiratorial narratives have been compared to the level of trust in institutions to establish if there are positive or negative correlations between them (whether people who are more prone to believing in conspiracy theories are more or less prone to trust certain institutions and vice versa).

o A correlation between the level of trust in institutions and intensity of belief in a conspiracy theory which specifically targets hospitals in BiH.

o A correlation between the level of trust in institutions and vaccination status of the respondents.

When it comes to the **overall belief in conspiracy theories**, negative correlations were found between trust in several sectors and institutions, most notably the European Commission (r = -0.20, p < .001), the healthcare system (r = -0.18, p < .001), embassies (r = -0.17, p < .001) and courts (r = -0.16, p < .001). On the other hand, there was a small positive correlation between belief in conspiracy theories and trust in organized religion and religious authorities (r = 0.07, p < .03). Overall belief in conspiracy theories was also compared with trust in different institutions. Highest negative correlations were found between the belief in conspiracy theories and trust in the World Health Organization (r = -0.36, p < .001), University Clinical Center of the Republika Srpska and Headquarters for Emergency Situations of Republika Srpska (r = -0.20, p < .001 each) and Cantonal Covid-19 Crisis Group (r = -0.18, p < .001). No positive correlations were found between the overall belief in conspiracy theories and trust in any of the institutions mentioned in the research.

This could be because the number of claims with conspiracy theories that were given to the respondents was relatively high and their content quite diverse. However, these findings do confirm the conclusion that low trust in institutions correlates with the propensity to believing in conspiracy theories.

The correlation values were higher when a relationship was made between one **specific conspiracy theory** and trust in different institutions. This narrative was probed separately from other "conspiratorial" narratives and associated with trust in institutions because it 1) targets local health institutions specifically, but reflects a global narrative targeting hospitals; 2) has gained significant traction among the population despite being highly unrealistic.

In the summer of 2020, "testimonies" that hospitals in BiH are offering relatively large sums of money to family members of deceased patients if they agree to sign off on a false claim that their relatives have died of Covid-19 gained considerable traction on social networks.[94] The hospitals, it was claimed, were doing this because they were getting paid for each person who died of Covid-19, so they were ramping up the numbers in order to make more money. These claims - a local version of a global and broader narrative that hospitals are profiting from the pandemic and neglecting or deliberately harming people in the process[95] - were circulated in formulaic, folktale-like "friend of a friend" narratives, both online through chat applications and social networks, and through "word of mouth".[96]

The survey question about this narrative was posed separately from the 48 short statements with conspiratorial claims and phrased broad enough so that it conveys possibly different versions of the story of hospitals participating in a "pandemic hoax" by faking Covid-19 deaths.

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[94] See: Krupalija, "Bolnice ne nude novac."

[95] See, for example: Amina Čeliković, "Plaćanje za koronu": Epizoda "Andrew Kaufman i bolnice u SAD," *Raskrinkavanje*. August 7, 2020. https://raskrinkavanje.ba/analiza/placanje-za-koronu-epizoda-andrew-kaufman-i-bolnice-u-sad (accessed February 15, 2022).

[96] Some of the less outlandish stories, lacking claims of "bribing" the families of the deceased, but accusing hospitals of being "paid per Covid-death", even made it to the media reports (See: Elma Murić, "Bolnica u Travniku ne naplaćuje 15.000 eura od EU za svakog preminulog od koronavirusa," *Raskrinkavanje*. September 4, 2020. https://raskrinkavanje.ba/analiza/bolnica-u-travniku-ne-naplacuje-15-000-eura-od-eu-za-svakog-preminulog-od-koronavirusa (accessed February 15, 2022). During 2021, these narratives morphed into a more radical claim that hospitals are not just falsely registering deaths of other causes as Covid, but that medical workers are deliberately killing hospitalized patients (See: Mladen Lakić, "Ne, u Novom Pazaru nisu "ubijali pacijente" na COVID-19 odjelu," *Raskrinkavanje*. February 11, 2021. https://raskrinkavanje.ba/analiza/ne-u-novom-pazaru-nisu-ubijali-pacijente-na-covid-19-odjelu (accessed February 15, 2022).

The question read: "Last year, testimonies were circulating that all hospital deaths were "registered" as Covid-19, even if patients died from something else. In your opinion, how much truth is there to those claims?".

The respondents answered on a 5-point scale, ranging from "This is not at all likely to be true" to "This is definitely true". An astounding 73.1% of the respondents agreed with this statement to some degree (45.3% partially, 27.8% completely). An impact this high of this narrative, previously seen on social networks, is particularly striking given its implications and the fact that it targets medical workers who have been struggling with the pandemic response for nearly two years.

The majority of both the vaccinated and non-vaccinated respondents agreed with this claim, but the number was much higher among the unvaccinated, with a particularly stark difference in the number of respondents who answered that the claim is "definitely true" (vaccinated 16.6%, non-vaccinated 41.1%). Similarly, a minuscule percentage of the entire sample (5.1%) has completely rejected this claim, but that percentage is half as low for the unvaccinated respondents (only 2.7%).

Last year, testimonies were going around that all hospital deaths were "registered" as Covid-19, even when patients died from something else.	All participants		Vaccinated	Not vaccinated
This is not at all likely to be true	52	5.1%	7%	2.7%
This is not very likely to be true	148	14.5%	20.8%	7.1%
There is a possibility that this is true	461	45.3%	48%	44.4%
This is definitely true	283	27.8%	16.6%	41.1%
I don't know/I'm not sure	75	7.3%	7.7%	4.7%
Total	1018	100%	100%	100%

Table 29: Belief that hospitals inflated number of Covid-19 deaths

The answers to the "hospital death miscount" question were correlated with the respondents' trust in various healthcare institutions, resulting in negative correlations with all the compared variables. The highest negative correlation was determined between the belief in this conspiratorial claim and the trust in two of Republika Srpska's institutions: the Covid-19 Crisis group and the University Clinical Center ($r = -0.35$, $p < .001$ each), followed by the World Health Organization ($r = -0.32$, $p < .001$).

Moderate negative correlations were also found between this belief and the trust in the Federal Ministry of Health (r = -0.26, p < .001). The lowest negative correlation was found between this belief and trust in the Abdulah Nakaš hospital (r = -0.16, p < .001).

There was a positive correlation between the **vaccination status** and the trust in various social and state institutions. Looking both at the sectors and the individual institutions, the highest positive correlation was found between the vaccination status and the trust in the World Health Organization (r = 0.27, p < .001), Covid-19 Crisis Groups of the entity governments (r = 0.23, p < .001 in the Federation of BiH and r = 0.21, p < .001 in Republika Srpska), the healthcare system (0.20, p < .001), the European Commission (r = 0.14), and the state television (r = 0.13, p < .001). These correlations mean that the vaccinated persons are likely to be trustful of these sectors and institutions and have more trust in them than the unvaccinated persons.

INSTITUTION	CORRELATION
World Health Organization (WHO)	0.2731296
Covid-19 Crisis Group of the Federal Ministry of Health	0.2330286
Covid-19 Crisis Group of Republika Srpska	0.2105802
University Clinical Center of the Republika Srpska	0.1959647
Cantonal Covid-19 Crisis Group	0.1910656
Abdulah Nakaš Hospital	0.1850036
Federal Ministry of Health/Ministry of Health and Social Welfare	0.1763094
Local hospital	0.1594711
University of Sarajevo Clinical Center (KCUS)	0.1489341
FBiH Public Health Institute/Public Health Institute of RS	0.1391839
Local Health Center	0.1162984

Table 30: Trust in individual institutions and vaccination status: Correlations[97]

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[97] All correlations in the table are statistically significant at p < .001.

FOCUS GROUPS DISCUSSIONS

Qualitative segment of the research was based on 4 online focus group discussions with individuals in BiH between November 2021 and January 2022. The first three groups were recruited from wider regions of Sarajevo, Banja Luka and Mostar respectively, and were made up of persons who are not vaccinated against Covid-19. The assumption behind that decision was that, given the availability and accessibility of immunization against Covid-19 at the time when the research was conducted, the decision not to get vaccinated would most likely be a result of already adopted false beliefs about the safety and/or efficacy of vaccines. The fourth, "control" group, had respondents from all three locations together and it was also a "mixed" group in terms of vaccination status: the recruitment sought out people who got immunized between October of 2021 and January of 2022.

A total of 34 people participated in focus groups. Participants were of a relatively young age (32.5 average for all groups) which is one of the limitations of online focus group discussions. Special attention was paid to the protection of privacy of the data provided by the participants. All variables and data fields that could directly point towards identities of the participants are eliminated from databases and reports. Answers of respondents were also physically separated from their personal data. Protection of personal data is made in accordance with the ESOMAR and AAPOR codex.

The focus group discussions were set out to establish how the participants perceive different institutions, authorities and information about the pandemic. These findings were used to inform the discussion on possible information-sharing strategies that the institutions could employ to promote fact-based information, increase community awareness and possibly influence a change in behavior towards safer health choices in the population that is showing distrust in the official and scientific information about the pandemic, particularly about immunization and protection from Covid-19.

IN-DEPTH PROBE OF SURVEY FINDINGS: BELIEFS ABOUT THE PANDEMIC AND THE VACCINES

Belief in dominant conspiracy theories about the pandemic and Covid-19 vaccines was exceptionally strong in all groups and the participants who initially expressed agreement with conspiratorial claims in the recruitment questionnaire have expressed similar views early on in the discussions.

The focus group discussions confirmed results of the quantitative survey and provided in-depth information on rationalizations and motives behind the beliefs expressed in the survey. Discussions in focus groups also instructed additional analysis of the quantitative data, particularly in the segment of detecting contradictory beliefs, i.e. agreement with mutually exclusive conspiracy theories, which has been established in other studies of conspiratorial beliefs in literature.

Nearly all the focus groups participants hold beliefs about the origin of the virus similar to the conspiratorial claims which were used in the survey. Many are of the opinion that the SARS-CoV-2 virus is "artificial" and that it was intentionally released into the public. The rationalization behind that belief is that "a natural virus could not be this strong and dangerous". However, the participants also largely believe that Covid-19 is just a "common cold" that has received disproportional coverage in the media, that the severity of the illness is overblown and that the deaths caused by other conditions are being registered as Covid-19 deaths. There were not many participants who overtly claimed that the virus is not real or does not exist, but there was a lot of agreement on the belief that it was not a new virus, or that it was not as strong and dangerous as "the media and the politicians" want the people to believe.

These mutually exclusive explanations of the pandemic did not lead to any particular disagreements between the participants and, for the most part, it looked like both viewpoints were acceptable for many of the participants at the same time. This is in line with the survey results which have demonstrated that mutually contradictory statements seem equally plausible to 15-30% of the total population, depending on how the statements are phrased.

CONTRADICTORY BELIEFS ABOUT THE CORONAVIRUS: SURVEY RESULTS

Beliefs in conspiracy theories around the existence and origin of the SARS-CoV-2 virus have been probed in a couple of statements "scattered" throughout the survey. Besides the direct and explicit statement that the virus "does not really exist", the survey respondents were also asked to rate the plausibility of the following statements:

- o Coronavirus does not exist, the real cause of Covid-19 disease is spraying from the air
- o Autopsies of Covid-19 patients are prohibited because they would show that the virus does not exist.
- o Scientists have never isolated the SARS-CoV-2 virus (coronavirus).

The survey also contained statements that directly contradict this claim, such as "virus is intentionally released into the population" or "the US military has developed the coronavirus as a biological weapon".

When the responses to these questions were run against each other, the analysis has shown that a significant portion of the population showed agreement with both sets of statements.

The statement that the coronavirus does not really exist had an overall agreement of 21.1% (people who responded that they mostly or strongly agree with the statement), while the statement that it was intentionally released into the population had 60.2% of people saying that it is very likely or definitely true.

Almost half (48.8%) of the 613 participants who agreed that intentional release of the virus was very or entirely likely also agreed with the statement that autopsies of Covid-19 patients are prohibited because they would show that the virus does not exist (299 of the 613). The overlap was found in 29.37% of the entire sample. Out of the same 613 participants, 287 also agreed that scientists never isolated the virus and 204 participants agreed that the real cause of Covid-19 could be spraying from the air.

Three quarters (74.8%) of the respondents who agreed with the statement that the virus does not exist (214 respondents), also agreed with the statement that it is intentionally released into the population (160 out of the 214). The respondents with an overlapping agreement with these two contradictory statements make up 15.62% of the total sample. Almost the same number of respondents (159) also agrees both with the statement that the virus does not exist and that the real cure for Covid-19 is being hidden from the public.

Overall, the participants dominantly believe that there are hidden motives behind the pandemic and see it as a planned or staged event. They did not, however, provide precise and specific responses to the question of what the motives or goals for that might be and who is behind it. Actors who are mentioned as potential culprits are governments/countries, politicians in general and the pharmaceutical industry. Several participants mentioned Bill Gates in particular as a person whose behavior indicates that he might be "behind the pandemic", referring to the fact that he gave statements about the pandemic and the vaccines although he is not a medical expert.

Those who fall more on the side of belief that the virus is deliberately created as a strong and/or deadly pathogen, also believe that it was done to either "depopulate" the Earth, or target some specific population, like the elderly.

Others, who believe that the magnitude of the pandemic and its consequences are overblown, think that it was done in order to establish control over the population. This corresponds to the widespread online narratives about measures like lockdowns, masks, distancing and vaccination as attempts to "enslave" the people, rather than protective measures against the spread of the virus.[98]

CONTRADICTORY BELIEFS ABOUT PROTEST RALLIES: SURVEY RESULTS

One of the statements in the survey was that mass protests are "never spontaneous and are always orchestrated by the hidden centers of power", with 458 (45%) participants partially or entirely agreeing with that claim. A claim that "people are fighting against tyrannical anti-Covid measures in street protests worldwide" has received partial or full agreement from 529 (52%) participants.

The overlap between the participants who expressed agreement with both statements is significant: **257 participants** (**25.25%** of the whole sample) simultaneously believe that mass protests are never genuine and that mass protests against anti-pandemic measures are an expression of genuine will of the people, pointing to a conclusion that authenticity of the protests is not questioned if it fits the existing beliefs of the participants.

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[98] Krupalija, Rašid et al. (2020). (publication). Disinformation During Covid-19 Pandemic, 25

Both "camps" - although the line between them is neither clear nor strong, as seen in the previous chapter - often reply that economic motives are the most likely reason that the pandemic happened. This was also the most frequent answer (56.40%) to the survey question about motives for "releasing the virus".

However, the participants gave very vague answers when asked who could have benefited from an event which brought worldwide economic hardships, usually reaching for other disinformation or conspiracy theories as "proof" that someone made an economic gain ("China profited in breaking of trade agreements"; "Countries may be in recession, but their 'rulers' aren't"), or invoking older conspiracy theories, like those about Bill Gates stating that the number of people on the planet needs to be reduced (by vaccination).[99] Information on deaths from Covid-19 were also equally questioned in all groups, as was the severity of the illness itself.

Participants strongly believe in the conspiratorial narratives that the vaccines were offered before they were properly tested, that they are "experimental", developed too fast, triggering serious side-effects and/or leading to illness or even death. Distrust in vaccines was expressed almost equally in the mixed group where some participants were vaccinated, with the exception of the older vaccinated participants, who did not question vaccines' safety or efficacy. Several vaccinated participants stated that they did it in order to accomplish some practical goal, like being able to travel without restrictions, but they still displayed high distrust and negative attitudes towards vaccines and official narrative of the significance of immunization.

The false beliefs were mostly centered around safety and personal fears of health consequences of vaccination. Vaccine efficacy is also highly doubted, as many participants hold a false belief that vaccinated and unvaccinated persons are at equal risk of getting sick or dying from Covid-19 (these beliefs are also present in some vaccinated participants). Many participants have repeated the inaccurate claim spread online that vaccinated and unvaccinated people are dying and getting hospitalized at the same rate. "Vaccine deaths" are found to be believable, while official numbers on Covid-19 deaths are questioned.

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[99] Aldin Karahasanović, "Bill Gates nije govorio o "depopulizaciji putem prisilne vakcinacije" kao rješenju za klimatske promjene" . Raskrinkavanje. March 3, 2021. https://raskrinkavanje.ba/analiza/bill-gates-nije-govorio-o-depopulizaciji-putem-prisilne-vakcinacije-kao-rjesenju-za-klimatske-promjene (Accessed March 30, 2022).

IN-DEPTH PROBE OF SURVEY FINDINGS: TRUST AND INFORMATION SOURCES

Very common belief among the participants was that the news about the pandemic is generally inaccurate, unverified, or exaggerated and that the daily numbers of Covid-19 cases or deaths are being manipulated. There is high mistrust in the media and in almost all institutions when it comes to the information they provide on the pandemic.

The participants did not believe local or foreign authorities on the subject and they discredited the motivation and the expertise of doctors and scientists talking about the pandemic, while quoting people who are not experts on the subject as more reliable sources of information. However, when asked where they found credible information, they rarely gave precise answers (they mostly talked about "media" in general or refused to answer).

In addition to expressing mistrust in the official institutions and authorities, the participants were also largely unaware of the social or expert consensus on the topic. Basic scientific literacy is visibly lacking, as a lot of the participants point out that "one doctor will say one thing, and the other will say another, it's all a matter of perspective". There is no distinction between personal opinions and scientific consensus in evaluating medical doctors' public statements.

Participants expressed mistrust in all sources except for those they already identified with, that propagate narratives they already believe in. They claim they would consider or believe different narratives if they were "presented by experts, rather than politicians, Bill Gates and others non-experts". This sentiment was very present in all the groups, paired with the claim that distrust of the "official" narrative about the pandemic is, in a large part, due to the fact that it's been instrumentalized by politicians and exploited by the media.

However, when these claims were tested, they were proven to be false, as all information which did not confirm their previous positions was dismissed, even when it came from experts. It is symptomatic that personal experiences and anecdotal "evidence" were intensely used to dismiss scientific facts presented by the moderator.

What is particularly alarming is that several participants claimed that they were advised by their doctors not to get vaccinated, some mentioning health conditions that are not contraindicated for getting the vaccine.[100] This advice, they claim, came from doctors like pediatricians, family doctors, gynecologists (citing risk to pregnancy, which has never been documented), even immunologists and epidemiologists claimed to be professing "natural immunity". Two participants mention knowing immunologists and epidemiologists who are unvaccinated themselves and/or do not vaccinate their children. Some of these rumor-like claims may also come from online "tropes" (similar claims are frequently shared online), but it is likely that at least some are true and that real-life doctors may be giving misinformation as advice in their medical practice.

The participants believe that the media and the politicians were aggressive in their approach and that they have overblown the significance of the pandemic. They claim that the media have "banished real doctors" from the airwaves and are not allowing "real journalists to report the truth about the pandemic". This is in support of the view of professional, editorially-shaped media as being instrumentalized by various powerful actors who are directly dictating what they can or cannot cover. They are seen as working in the interests of their owners (secret or overt) rather than the public interest. In contrast, the conveyors of conspiracy theories who use the internet to spread misinformation are seen as "real doctors" or "real journalists" who are telling the truth online. The internet is thus seen as the space of freedom, where credible but otherwise censored sources like "YouTube doctors" or "German scientists",[101] were able to give out accurate information on the pandemic and the vaccines.

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[100] However, when asked if they would listen to those same doctors if they told them to get vaccinated, the answer in almost all the cases was "no".

[101] A reference to various persons from Germany, some with medical degrees, who became popular in the "conspiratorial" online circles during the pandemic, mostly through viral YouTube videos propagating various conspiracy theories. See, for example: Amar Karađuz, "Tvrdnje njemačkog doktora o "jako čestim" krvnim ugrušcima nakon vakcinacije nemaju utemeljenje u stvarnosti." *Raskrinkavanje*. June 17, 2021. https://raskrinkavanje.ba/analiza/tvrdnje-njemackog-doktora-o-jako-cestim-krvnim-ugruscima-nakon-vakcinacije-nemaju-utemeljenje-u-stvarnosti (Accessed March 30, 2022).

Maida Salkanović, "Uprkos tvrdnjama njemačkog biologa, virusi postoje i izazivaju bolesti". *Raskrinkavanje*. June 15, 2021. https://raskrinkavanje.ba/analiza/uprkos-tvrdnjama-njemackog-biologa-virusi-postoje-i-izazivaju-bolesti (Accessed March 30, 2022).

Marija Ćosić, "Grafen u vakcinama, mRNA u genima i protein šiljka u organima: Dezinformacije njemačkog homeopate." *Raskrinkavanje*. September 28, 2021. https://raskrinkavanje.ba/analiza/grafen-u-vakcinama-mrna-u-genima-i-protein-siljka-u-organima-dezinformacije-njemackog-homeopate (Accessed March 30, 2022).

However, unlike the survey, where an average of 41% of the respondents marked the internet as their regular or frequent source of information about Covid-19 pandemic and vaccines, almost nobody in focus groups has explicitly stated that they are getting their information about these topics on the internet, although this is apparent from the content of their claims which are identical to those circulating on YouTube channels, Facebook pages/profiles and news platforms that publish conspiracy theories. Most of the claims that the groups believe in were not aired on TV or published in the press and could not be heard from official sources. The specific examples of trustworthy sources they gave, such as aforementioned "German doctors" or "YouTube scientists", reaffirm this conclusion.

This discrepancy between the willingness to identify online platforms as sources of beliefs and the content of the same beliefs, that is entirely shaped by those very sources, may, in part, be explained with an overall bad reputation when it comes to reliability and trustworthiness of online sources, especially social networks. The report on media habits of adults in BiH points to a similar paradox:

> *"BiH adults tend to trust information available in traditional media more than that spread by online media. They are most likely to believe information broadcast on television, with nearly a third of adults (31%) who say that only true or mostly true information is broadcast on television. Adults are least likely to trust information on social networks with only 13% who believe that this information is completely or mostly credible. At the same time, over half of BiH adults who use the internet (56%) do not perform any fact-checking of information they encounter online."[102]*

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[102] Snjažana Hasanagić, Maja Papović, Erna Lević, (2021). (publication). *Research on Media Habits of Adults in BiH*. Council of Europe & Bosnia-Herzegovina Communications Regulatory Agency. Accessed March 30, 2022, from: https://medijskapismenost.ba/wp-content/uploads/2021/11/Posljednji-final-NEW-CC-for-CoE-BHS-Final-Report-211021-002.pdf

REACTIONS TO ACCURATE INFORMATION

Various formats were used to present accurate information coming from official sources, including written statements, different types of videos (experts participating in live TV shows, pre-recorded YouTube videos and materials from campaigns sponsored by official institutions, featuring either experts sharing official information, or various persons sharing their own opinions or experiences with Covid-19 and/or vaccination) and images (infographics, explainers, photographs with messages from experts).

Experts and members of the medical community were used as sources of accurate information about the virus and/or vaccines during the focus groups, but they were not seen as credible sources by the participants because they were making statements contrary to their beliefs. Regardless of the format used to present information, the participants would react by either questioning the person's authenticity or their credibility ("How do I know this is really a doctor and not some performer dressed in white uniform?"; "Maybe she was paid to say that"; "How do we know she really underwent the necessary training to be considered an expert on this subject?").

This was even the case with a video sharing a story of personal loss (death of family members from Covid-19) with some participants questioning whether people in the video are "real" and if they really lost someone (some even commented that the persons in the video looked "too prepared" for their story to be believable). This is in stark contrast with the "blind trust" given to the sources of conspiracy theories, or figures like Serbian pulmonologist Branimir Nestorović, who was mentioned as being believable because he "talks like one of the people", without any reservations towards his expertise, training or motives for public engagement.

As mentioned above, it is not uncommon to find more than one (sometimes even logically mutually excluding) attitudes to exist in one person. Pointing out these inconsistencies by the moderator did not have much effect on them to consider a possible shift in perspective. The respondents who did not want to get the vaccine would regularly change their main arguments during the discussion and adopt the arguments of the most dominant members of the group, even if they did not use them at the beginning of the discussion. Once presented with facts about the pandemic, they remembered only those parts that are congruent with their preexisting attitudes.

The inconsistency in arguments is followed by similar inconsistencies in attitudes and explanations of the participants' beliefs. Many of them pointed out that people are generally confused about the pandemic, overwhelmed with information, and uncertain who they should trust. Some also point out that they are generally disinterested in following the news about the pandemic for those very reasons, but also because they feel it has been "shoved down their throat" by the media and the politicians.

However, the same persons still display strong investment in beliefs they hold and, when confronted with evidence of beliefs that contradict their own, they are very rigid in defending them and seem to become even more attached to them. This was particularly the case in the first three groups, which only had unvaccinated participants. The arguments and attitudes were somewhat less intense in the mixed group, where it was clear from the beginning that there are some differences in opinions between some of the vaccinated and unvaccinated participants.

These findings are in line with the literature that suggests that, once a belief about a highly polarizing topic is formed, refuting it with facts is very difficult and may even have an opposite effect. Experiments have shown that "…confronting citizens with the truth can sometimes backfire and reinforce existing misperceptions. For instance, conservatives who received information that Iraq did not possess weapons of mass destruction were more likely to believe Iraq had those weapons than were respondents who did not receive the correct information. These results are both disturbing and counter-intuitive; they suggest that, with regard to political issues, **attempts to correct the misperceptions of ordinary citizens may exacerbate the stickiness of mistaken beliefs**. Moreover, these findings contradict much of the advice in psychology on how best to address rumors."[103]

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[103] Berinsky, Adam J. (2017). "Rumors and Health Care Reform: Experiments in Political Misinformation." *British Journal of Political Science, 47(2)*, 241-262. https://doi.org/10.1017/S0007123415000186

INTERVIEWS

For the purpose of this research, 15 stakeholders from BiH were contacted, from the sectors of the media, education (universities, agencies for development of preschool, primary, high school and higher education) and health institutions of both entities and Brčko District (health ministries, Institutes for public health). Out of all the contacted stakeholders, 6 agreed to an interview.

In a series of online interviews, representatives of the media (2), a university professor (1), a representative of the RS Ministry of Health (1), a Health Department of Brčko District official (1) and a Communication Regulatory Agency representative (1) were introduced to preliminary results of the survey and asked to give their comments and opinions on results, with special emphasis on the potential for change within the outlined problems.

Customized overviews of research results and interview questions were prepared for each stakeholder in order to put the focus on the findings in the areas of relevance for their specific institutions, particularly in terms of recommendations to tackle the issues outlined in the research results.

All the stakeholders stated that research results, showing widespread belief in conspiracy theories and disinformation about the pandemic and the vaccines, were not a surprise for them. They are all aware of the problem of strong beliefs in conspiracy theories in society, even though their institutions and organizations did not conduct any similar research. On the other hand, all the stakeholders were surprised with the percentage of the vaccinated population (over 50% of the participants in the survey) far higher than the official figures (around 30% of the country's population[104]).

Stakeholders mostly agreed that the problem of widely spread belief in conspiracy theories is a problem of society in general and see its causes in multisector issues, such as poor education, insufficient media literacy, lack of educated media professionals and the general lack of trust in institutions. There is an overall agreement that the only real solution is to make deep systematic changes, rather than solely tackle these issues through specific institutions.

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[104] Tatjana Drljić, February 17, 2022. "BiH do sada vakcinisala oko 30% stanovništva, nedovoljno za kolektivni imunitet." *N1*. https://ba.n1info.com/vijesti/bih-do-sada-vakcinisala-oko-30-stanovnistva-nedovoljno-za-kolektivni-imunitet/ (Accessed March 31, 2022).

The interviewees noted that their institutions could contribute to tackling the issue of such misguided beliefs, with a few of them also admitting that their institutions might also have been a part of the problem so far. For example, Sanjin Gutić, associate Professor at the Faculty of Science, University of Sarajevo, commented on the relatively high percentage of respondents with college degrees and with strong beliefs in conspiracy theories, pointing out that sometimes university professors, usually outside of STEM fields, act as propagators of conspiracy theories or pseudoscientific concepts and beliefs. Therefore, even the institutions of higher education can and in some cases do become places which spread disinformation narratives.[105]

Senada Ćumurović, head of communications of Bosnia's state public broadcaster BHRT and Jelena Kalinić, a biologist and science journalist, both agreed that media coverage of the pandemic is unsatisfactory, specifically in terms of the disinformation regarding Covid-19 vaccines. One of the problems that they both acknowledge is a lack of Bosnian experts who would be willing and able to offer explanations and help resolve doubts in their media appearances.[106]

Kalinić stressed that experts from BiH need to engage more with the public and stop being silent about disinformation targeting their own fields, which is now largely the case.

However, she also noted that there is a problem on the media's end as well, given the severe lack of explanatory science journalism,[107] but also a lack of media's interest in science journalism in general.

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[105] "We have at public and private universities people who (publicly) propagate such things. Most often, these are not people from this profession, from chemistry or physics, but it is something that is close to that and it is an obvious example of that famous Dunning-Kruger effect. Someone learns a little about something and then feels confident to speak about it publicly".

[106] "There is generally a lack of experts in Bosnia, to talk about this topic - or we do not know how to recognize them - because we always have the same people on (experts willing to talk to media) and we often turn to people from Croatia, Serbia, or to our experts who work in some Western European countries, so we invite them to the program online. So there is objectively a lack of people who can speak competently about it in the media", Ćumurović stated.

[107] "The media should offer explanations, for example, on how vaccines work; what they can and can not do, but we simply do not have such content in the mainstream media", Kalinić said.

Kalinić, who partners with the fact-checking website Raskrinkavanje in a campaign "Science Talks",[108] gave an example of the blogs she is running, one solely dedicated to informing the public about the vaccines,[109] another about science in general.[110] Both are rarely republished or referenced in mainstream media even though the content is free for sharing, so the problem is that the media do not use even the resources that are available, however scarce they may be.

Sead Šadić, head of Department of Health and Other Services of the Brčko District, believes that the local institutions failed to work on prevention in different areas of public health, so that it is not surprising, due to the lack of that proactive approach, that a significant number of citizens may have been driven to "distrust certain medical procedures and seek information (about health) on social networks", or from other sources which are not credible. The institutions should, therefore, be more proactive, work to provide more information to the public and to raise trust in medicine. Šadić believes that the media are a strong ally when it comes to prevention, but that institutions should not rely just on traditional media. Since many citizens already do seek information on social media, the institutions should be present there so that the people can have an alternative to many disinformative sources on the same networks. He pointed out that the Department of Health and Other Services of the Brčko District has a Facebook page where the citizens can get daily updates on Covid-19 cases and immunization.[111]

Jelena Vujić, the spokesperson of the Ministry of Health and Social Welfare of Republika Srpska, noted that the Ministry has conducted two internal research, in 2020 and 2021, both showing that health minister Alen Šeranić was perceived as the public figure providing useful data over pandemic (ranked first in 2020 and third in 2021, when local health centers were recognized as the primary source of useful data).

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[108] A series of "explainers" published under the hashtag #NaukaGovori, created in a social media friendly format, which provide accurate, updated and scientifically sound information about Covid-19 immunization.

[109] *Vakcine.* Vakcine. (n.d.) Accessed March 31, 2022, from: https://vakcine.ba

[110] *Quantum of Science.* Quantum of Science. (n.d.) Accessed March 31, 2022, from https://quantumofjk.blogspot.com

[111] Odjeljenje/Odjel za zdravstvo i ostale usluge Facebook page, accessed March 31, 2022 https://www.facebook.com/zdravstvobdbih

The Department's page also actively uses material from other sources' information campaigns about immunization against Covid-19, like WHO's "myth busting" explainers (https://www.facebook.com/zdravstvobdbih/posts/259314779710508), or explainer from the aforementioned #NaukaGovori campaign (https://www.facebook.com/zdravstvobdbih/posts/251162553859064)

Vujić interprets this as the Ministry's strategy to decrease daily press conferences in 2021 as compared to the previous year. She rates the media response to the pandemic as satisfactory, but says that she is aware of disinformation on social media and believes that the only way to prevent it is to offer facts. Vujić also pointed out that the Ministry communicates with the citizens through its Facebook page where information regarding vaccines can be found.[112]

Presence on social networks has been mentioned by other interviewees as well, specifically as a recommendation for the media to create more explanatory forms of content to communicate with a younger audience. Jelena Kalinić stresses that the media should also pay more attention to comments sections on their websites and social media accounts, as they are widely used to spread misinformation and conspiracy theories. She also thinks that the media should be focusing on different ways of presentation of media content, keeping up with popular formats like Instagram reels, but recognizes that a transition to this type of content requires significant funding, which is a problem for bloggers and smaller media outlets. However, funding for efforts to bring more quality content is also stressed as a problem by BHRT's Senada Ćumurović.

Azra Maslo, Head of the Department for Media Literacy and Maida Čuhalović, Head of the Sector for Programme Content and Complaints of the Communication Regulatory Agency (CRA), stated that the CRA has very limited competencies when it comes to disinformation in the media (TV and radio), nor has it received any complaints regarding that type of content since the beginning of the pandemic. As Maslo explained, the CRA has created an informal network of institutions, media and civil society representatives dedicated to strengthening media literacy, gathered under the website and Facebook page "Medijska i informacijska pismenost u Bosni i Hercegovini".[113] The aim of this initiative is not only to increase media literacy, but to create opportunities for collaboration of different actors involved. In their view, this type of multi-sector cooperation is a way to battle disinformation in Bosnian media.

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[112] Ministarstvo zdravlja i socijalne zaštite Republike Srpske Facebook page, accessed March 31, 2022 https://www.facebook.com/profile.php?id=100064985854728

The page, however, appears to have been inactive since November 2021.

[113] Medijska i informacijska pismenost u Bosni i Hercegovini Facebook page, accessed March 31, 2022. https://www.facebook.com/mipismenostbih, Medijska i informacijska pismenost (n.d.) Accessed March 31, 2022. https://medijskapismenost.ba

Cross-sector collaboration has been mentioned by other interviewees as well. Jelena Kalinić also sees stronger networking between the media, fact checking organizations and prominent experts as one part of the possible solution in tackling disinformation. She specifically mentions that it is important to encourage scientists and experts, who may not be experienced in public speaking, to share their expertise through media channels, by establishing relationships with them and providing skills and knowledge of public speaking, public presentation and similar. She sees cross-sector cooperation in strengthening fact-based journalism and debunking pseudoscience as crucial in these efforts. Kalinić, however, points to problems existing outside of the public communication sphere, such as people getting wrong advice from their family doctors, who may not have expertise in specialized fields like immunology (a remark also confirmed by this research). She thinks that continuous professional education in the field of vaccination should be provided for health workers to avoid situations where they are offering outdated or even incorrect information regarding vaccines to their patients.

Professor Sanjin Gutić also stresses the relevance of collaborating across various sectors. The University, as an institution, should be an ally of the civil sector, the media and fact-checkers in the fight against misinformation. Gutić also sees a problem in the fact that credible experts remain silent, when it should be the opposite. He emphasized that the result of this and similar research should be presented and debated in academic institutions (specifically, the University of Sarajevo). Gutić believes that activities like that should also instigate a broader discussion about the role of the University in society as an institution which should be fostering positive changes and influencing public opinion.

CONCLUSIONS
LIMITATIONS OF THIS RESEARCH

As with every research, there are some limitations that need to be discussed before considering conclusions and recommendations based on the research results.

The quantitative research was done through an online survey and focus groups discussions were also conducted online due to the limitations of in-person interviews and group gatherings posed by the pandemic. Online questionnaires and focus groups have inevitably skewed the demographics of the participants towards the younger population. In the case of quantitative research, these and other demography-related limitations were weighted to provide data more in line with the country's demographic. The respondents' answers were weighted using the 2013 census data which have their own limitations, for the reasons explained in this report.[114]

One of the issues considered was whether the demanding nature and length of the questionnaire could have influenced the answers of the participants, who were required to answer a lot of questions on diverse topics, many of which are polarizing or perceived as carrying a social stigma. These kinds of questions could have induced negative feelings in respondents (as observed in the focus groups) raising concerns that the respondents may be inclined to avoid answering such questions honestly. However, the focus groups discussions demonstrated high congruence between attitudes and beliefs expressed in the groups and the survey results. Additionally, the open-ended question about the trustworthy public figures (where participants were able to write in their answers) was also used by many participants to express their opinions on the pandemic, showing high interest in the topic. These findings make us confident that the answers to the questionnaire were genuine and authentic.

When it comes to the qualitative part of this research it is important to note that the focus group discussions have addressed deeply held beliefs and complex issues in a short, limited period of time. Attitudes concerning the pandemic and vaccination are not only attitudes on health issues.

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[114] See: **Covid-19 pandemic in BiH** in this report.

They also include deep mistrust in institutions and experts, processing of a large number of conflicting information about the vaccines and pandemic that come from different sources, a referent group pressure to which they feel the need to conform, adopted view of vaccination as something that possibly threatens their body integrity, fear for themselves and their families, economic pressures, personal experiences with the virus, etc. It is against this backdrop that the participants were presented with materials cognitively dissonant with their beliefs, engaged with them for a short period of time and were asked to re-evaluate their beliefs.

Making such big attitude changes takes time and consistent educational efforts and it would not be realistic to expect immediate results and opinion change in such limiting circumstances. The qualitative research results should therefore be viewed as valuable insight into the reasoning behind such beliefs which can inform policy-makers, educators, media and other actors in rethinking information and communication strategies, rather than a "blueprint" for such strategies.

OVERALL BELIEF IN CONSPIRACY THEORIES

As shown in the survey results, almost half of the participants can be described as "undecided" about conspiracy theories in general, meaning that they either chose to "neither agree nor disagree" with most of the statements conveying conspiratorial narratives, or that they are equally agreeing with some and disagreeing with other conspiracy theories offered in the form of 48 statements. A more detailed look into specific types of conspiratorial narratives shows that there are oscillations from the general results, but they are rarely significant.

In the interpretation of these results, it is important to keep in mind that the statements used to calculate the index were unequivocally false and some conveyed dangerous views like antisemitism, xenophobia and anti-scientific attitudes. Over a quarter of the population considers these claims plausible or true while almost half is unsure whether these false and potentially radicalizing statements are true.

While this imbalance in favor of wrongful and potentially harmful views can be a reason for concern, it should also be seen as an opportunity to think about solutions. As research shows, while people with extreme views are less likely to rethink them, those with moderate views are more open to changing their mind when presented with evidence. [115] The 47% of people "in the middle" leave enough room to think about strategies and policies to build resilience to such narratives and work against their further spread.

Demographically, this population consists of slightly **more women than men, it is more middle-aged, not college educated and more likely to live in rural than in urban areas**. These findings may be useful for the fine-tuning of communication strategies and development of information literacy curricula. However, there are no significant oscillations in the representation of different demographics when it comes to overall beliefs in conspiracy theories. That should be taken into account when considering information and communication strategies and information literacy programs, which seem to be needed across the demographic spectrum.

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[115] Lazer, David et al. (2017). (publication). *Combating Fake News: An Agenda for Research and Action.* Harvard Cuniversity 'Northeastern University. https://shorensteincenter.org/wp-content/uploads/2017/05/Combating-Fake-News-Agenda-for-Research-1.pdf?x78124 Accessed March 31, 2022.

TRUST AND INFORMATION LITERACY

The survey question about public figures who gave "meaningful and useful" explanations about the pandemic was used by many participants to explain why they thought that nobody gave such explanations, or to describe why they chose the specific person they wrote in. These answers provide a good insight into the perceptions of public information shared about the pandemic by various actors, which were also present in the focus groups.

Both the focus groups participants and the survey respondents frequently expressed the sentiment that there is no consolidated knowledge about the virus. The term "guessing" was used by several respondents when assessing which public figures gave trustworthy statements about the pandemic (one answer read that "absolutely no one" gave useful information, as "it's all just plain guessing"; another: "Nobody convinced me that they've uncovered the real truth about this, they are all just speculating").

In some cases, even respondents who did name a trustworthy figure, did so with a caveat showing similar distrust in any kind of established knowledge about the situation ("Minister Alen Šeranić, a person who, at least to me, seemed like he understood the situation we are in *at least to some degree*").

In addition to being mostly unaware that there is a social or expert consensus on the topic, the participants of the focus groups and the unvaccinated survey respondents alike expressed mistrust in the official institutions and authorities. A lot of the participants pointed out that "one doctor will say one thing, and the other will say another," framing any knowledge on the pandemic as a matter of perspective rather than facts. It is important to also point out that some of the focus groups participants - and, presumably, survey respondents as well - have, indeed, encountered situations where medical doctors they trust in everyday life have expressed vaccine skepticism, or even anti-vaccination views.

The effect of such interventions is exacerbated due to the lack of functional scientific literacy: as demonstrated in the focus groups, there was no distinction between personal opinions, anecdotes and scientific consensus in evaluating the credibility and weight of medical doctors' statements.

But even for those who do not subscribe to such views, the sheer visibility of people holding antivaccination beliefs created an impression that there is either a "divide" within the authorities (as seen in focus groups), or that such views are dominant in the public discourse.[116]

It is fair to assume that the effect of online "echo chambers", produced by the algorithms on social networks, amplifies the impression that conspiratorial views hold the same, or even more weight, as fact-based science. If one's digital environment is saturated with repeated false claims and there is no equally present counterweight from credible sources, it is easy to create an impression that these views represent a broad societal consensus and/or the "objective truth".

The same "running mill" which constantly serves more of the same content is not only validating, but enhancing such views, which can, in the longer term, lead to fostering radical and/or extremist movements and ideologies.

In fact, during the pandemic in particular we have seen an increase in radical ideologies based on conspiracy theories and prone to violent behavior, such as QAnon[117] as well as a rise in attacks and harassment of fact-checkers, journalists and even scientists who found themselves to be targets of those who considered the pandemic to be "fake" and all of the aforementioned actors as co-conspirators.[118] People also felt that statements of public figures were "inconsistent", interpreting that as a result of public figures not being genuine or being "coerced" or "bribed" into changing their opinions.

The presence of this view likely points to the fact that people were overwhelmed with confusing information about a new, frightening large-scale event, and the media, public figures and the institutions did not help to sort out the information chaos, nor have provided effective guidelines to navigate the information environment. This is particularly true for information circulating online. While the scientific knowledge of the virus grew quickly, this was not followed by comprehensible explanations for the broader public to be able to understand how science progressed and why some measures and recommendations changed with it.

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[116] One of the survey respondents wrote in: "I couldn't list any of the public figures, because most of them, as far as I could see, declare themselves as an anti-vaxxer, so I didn't notice anyone who tried to provide accurate and useful information".

[117] Cvjetićanin, *Fact-checking in the Balkans*, 2020.

[118] Cvjetićanin, Tijana. "Shut Up in the Name of Free Speech" *Transitions Online*. July 6, 2021. https://tol.org/client/article/shut-up-in-the-name-of-free-speech.html (Accessed March 31, 2022).

At the same time, explanations offered by conspiracy theorists, easier to understand and packaged in persuasive narratives, also rang familiar from other widely believed conspiracies (such as those about "secret rulers of the world"). As a result, the information flow seemed like a chaotic stream of unintelligible, contradictory and suspicious information, where changes of recommendations or new facts about the virus were seen as yet another "evidence" that there is no real knowledge about it.

In addition to those who felt either overwhelmed or uncertain about where to anchor their trust when it comes to information, a number of participants - mostly those who expressed strong belief in the conspiratorial narratives about the pandemic - demonstrated extreme distrust, bordering on a paranoid view of the world. Some of the answers from the survey, for example, stated that none of the public figures could be trusted because "they all wish us harm for their own personal interest", or that "they are all paid to lie". One answer even implied that those who really were trustworthy might be at risk even by being named in the survey ("I will not tell you (who that public figure is) because you may use something against that person"). Similarly, some of the participants in the focus groups had no trouble believing that undefined "powerful actors" - be it politicians, governments, or pharmaceutical companies - have purposely unleashed a deadly pandemic upon the whole world, taking a vague and abstract notion of their "financial gain" as a reasonable and conceivable explanation for such actions.

Even without such extreme examples, the trust deficit in society is obvious both from the qualitative and quantitative research results. So is its impact on behavior, as the unvaccinated respondents were considerably more likely to believe that hospitals were deliberately inflating the number of Covid-19 deaths and less likely to trust health institutions on various levels.

It is not unreasonable to question whether the relevant actors did everything possible in order to help the people understand the pandemic and their role in it, and if not, how could that be done in order to encompass all people, even those who are very skeptical about institutions (political and scientific) - or even those who find them harmful.

Intensive belief in conspiracy theories, while significantly present, is still not the prevalent mindset in the population. This can be read not just from the value of the index of conspiratorial beliefs, but also from the participants' much higher agreement with the 11 control questions in the survey than with the 48 questions which contained false and misleading claims rooted in conspiratorial narratives.

The focus group discussions, however, have demonstrated that such views, once adopted, are very hard to tackle and have a great potential to affect behavior, in this case health choices. Most of the participants remained unprotected against Covid-19 for the lack of trust in medical science, institutions or professional media, and intense belief in the widespread conspiracy theories about the pandemic.

While a body of previous research has shown that belief in one conspiracy theory raises the likelihood of belief in others,[119] this research also demonstrates that the intensity of belief in different conspiratorial claims is not necessarily the same. The recruitment of the focus group participants was done in a way to "filter out" those with strong belief in most widespread conspiracy theories focusing on different sectors, such as politics, health and technology. However, while they did not demonstrate strong overall belief in conspiratorial claims offered in the recruitment questionnaire, their belief in specific conspiracy theories regarding Covid-19 (both the disease and the immunization against it) was still exceptionally strong and resistant to any type of argument presented to them from positions of health authorities or medical experts.

This can also be seen as evidence that the intensity of such beliefs may also be "situational" and influenced by the amount of attention, the quality of information and the societal attitudes developed about the specific issue in question. It is possible that it may change over the course of time if one or more of those factors change, however strongly held at one particular moment.

Additionally, a portion of the unvaccinated participants explicitly said that only if some of their life's important aspects (job, receiving proper medical care, travel, etc.) should seriously suffer, they would (unwillingly) consider vaccination. Although they would not necessarily change their attitudes or the way they perceive the world, they would, if needed, change the behavior which could, in some cases, result in attitude change – once they discover that there were no expected consequences for their health. Similar arguments were heard from the participants who did choose to get vaccinated in the late 2021 and mostly did it for reasons like work and travel, rather than because they changed their opinions on the safety or efficacy of vaccination.

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[119] Wood, M. J., Douglas, K.M. & Sutton, R.M. (2012) "Dead and Alive: Beliefs in Contradictory Conspiracy Theories." *Social Psychological and Personality Science, 3(6),* https://doi.org/10.1177/1948550611434786

Policy-makers should therefore consider these findings on two levels:

- o Policies and activities to increase overall resilience against conspiracy theories and disinformation
- o Policies and activities to treat acute issues (such as a rise in antivaccination sentiments during the pandemic, or potentially radicalizing ideas and movements):
    - o Information campaigns aimed at preventing the rooting of specific disinformation and conspiracy theories
    - o Containment strategies

RECOMMENDATIONS LONG-TERM POLICIES TO STRENGTHEN RESILIENCE AGAINST DISINFORMATION AND CONSPIRACY THEORIES

Long-term policies to strengthen resilience against disinformation and conspiracy theories. Almost all interviewed stakeholders advocate for or agree with a multi sector approach, where people on the frontline of the fight against disinformation should partner with other sectors, particularly those with a more robust communication "infrastructure" provided through health and education systems. Synergetic approach to research in this field was also recommended, as well as more intense public engagement of those who produce highly specialized, expert knowledge (greater visibility of experts in the media and social media). Similar recommendations, taking into account different sectors like the media, regulatory bodies, fact-checking initiatives and tech companies, can be found in the relevant literature as well, with special emphasis on fostering mutual cooperation, but also on improving individual transparency of each of these sectors to build or strengthen trust of the society.[120]

BUILDING TRUST

Trust is one of the key factors to consider when thinking about long-term processes, especially in a society so deeply ridden with distrust in institutions and key information sources. This is why a systematic commitment and strategic orientation to build resilience against disinformation must first and foremost be established at the institutional level.

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[120] Pereira, Sara & Melro, Ana. (2019). "Fake or Not Fake? Perceptions of Undergraduates on (Dis)Information." *Media Studies: Digital Literacy and Propaganda Special Issue, 10(19)*, 46-68. https://www.fpzg.unizg.hr/_download/repository/ms_vol10_br19_kb_tisak.pdf

These efforts can and should be informed by the work and knowledge of actors like academic researchers and fact-checkers, but they cannot be replaced by them. The orientation towards building resilience and educating the public against disinformation has to come from public institutions and needs to be adopted on a strategic level. This means that the problem needs to be recognized, policies developed and solutions implemented and promoted on the institutional level, primarily - but not exclusively - within the education system.

The lack of trust in the institutions which permeates the society is directly related to the propensity of accepting outlandish claims like those about the health institutions' deliberate and malevolent operations against the population. There are deeply rooted reasons for such distrust, including the high perception of corruption (especially in the health sector), low efficacy of a highly bureaucratic public sector, dysfunctional and volatile political climate, low social capital and trust in the society, some of it as a result of the 1992-1995 war. These are the favorable preconditions for development of conspiratorial views, given that a large part of the society does not think that the institutions are working in their interest and cannot place their trust in them. The most important recommendation in that respect is one that is probably the most difficult to accomplish - establishing efficient and functional institutions in a democratic society, as opposed to a partitocratic system dependent on perpetuating an ethnopolitical divide and distrust.

There is a similar crisis of trust in the media, which were largely described in the focus groups as working "for someone" rather than working to inform the public. Additionally, very few media personalities from the news media were listed as trustworthy sources of information about the pandemic. Another worrying finding is that 49.6% of the survey respondents somewhat or entirely agreed with the statement that reputable international media are "staging" some of the events they report on. This claim corresponds with "crisis actors" conspiracy theories - that victims of various violent and/or tragic events (war crimes, police brutality, mass shootings, natural disasters) are actually paid actors and that atrocities and tragedies seen in the news have never really happened. This extreme view, typical for radical conspiratorial movements in the US, like QAnon and similar, has reached a significant level of agreement in the sample. Half of the respondents (49.6%) agreed with it, 30.6% were undecided and only 19.8% stated that they somewhat or entirely disagree with such a claim. However, as is the case with distrust in the institutions, this misplaced skepticism when it comes to media integrity is just one piece of a more complex puzzle. While "crisis actors" theories are a conspiratorial fantasy, people may have legitimate grievances when it comes to credibility, professionalism and trustworthiness of the media in BiH and the region.

There are over 2,000 media sources from the entire BCS speaking area (Bosnia and Herzegovina, Croatia, Montenegro and Serbia) in the database of the fact-checking website Raskrinkavanje, meaning that each has been rated at least once for publishing false or misleading information.

Large number of those ratings include clickbait and similar deceptive techniques to attract audiences with the sole purpose of financial gain and without regard for information value and professional standards of the published material. This is a direct result of the social media advertising model which has skewed a lot of media production in the direction of sensationalism rather than reporting.

Paired with political partisanship which is often openly displayed in the work of BiH news media, such a media environment creates distrust with the audiences which are repeatedly tricked by the very sources they should rely on for accurate information. This exacerbates the information chaos, which became particularly dangerous during the pandemic.

It is in this wider context that the recommendations for addressing the spread of mistaken beliefs and attitudes need to be seen. As Caulifield puts it, it is less a "crisis of truth" and more as "crisis of reputation"[121] and the problem lies less in misguided or incorrect beliefs and more in *disbelief and cynicism*. These tendencies towards dismantling factual value of information and the idea of truth itself are typical for authoritarian systems and highly corrosive for democratic societies: "In a world where nothing can be known and all producers of knowledge are seen to be compromised, there is no truth, only power."[122]

Addressing structural flaws within the important sectors responsible for informing the public is, therefore, one of the most important recommendations to come out from these findings. Pillars of credibility are necessary to establish what is accurate, true and trustworthy. Another is to teach people skills which can no longer be departmentalized into separate fields of media literacy, digital literacy, scientific literacy, while each of them holds its own value. They should, however, be seen as parts of an integral approach to information literacy which needs to be embedded in the education system and adopted as a goal across different policy sectors.

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[121] Michael Caulfield, "Recalibrating Our Approach to Misinformation." *EdSurge*. December 19, 2018. https://www.edsurge.com/news/2018-12-19-recalibrating-our-approach-to-misinformation (Accessed March 31, 2022).

[122] Caulfield, "Recalibrating Our Approach to Misinformation", 2018.

EDUCATION AND INFORMATION LITERACY

Studies have shown that even minor interventions in digital media literacy have an effect on people's ability to identify false information. Exposure to just the basic "Tips to spot false news" [123] online was found to improve people's ability to spot disinformation, or rather to reduce "the perceived accuracy of both mainstream and false news headlines, but effects on the latter were significantly larger". [124] This particular finding - that exposure to media literacy skills can increase skepticism towards accuracy of news in general - also holds an important warning for the policy makers, which re-emphasizes the need for an integral approach to information literacy: critical thinking alone is not a sufficient tool to fight disinformation, particularly complex "systems" like conspiracy theories which have found a fertile ground in the online world.

For these skills to be effective and for critical thinking not to slide into cynicism, what is crucial in the increasingly digital contemporary world is peoples' "ability to **effectively assess the reputation of experts, ideas, institutions and more**".[125] The online economy, including that of information sharing, depends on capturing and being able to keep the attention of the viewer, which is often successfully exploited by bad actors, including propagators of conspiracy theories, as pointed out by Caulfield.[126]

Critical thinking skills, which imply a thorough and deep analysis of information we encounter, is not necessarily productive and may have a counter-effect, because: "The goal of disinformation is to capture attention, and critical thinking is deep attention."[127]

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[123] Tips to Spot False News, Facebook Help Center, accessed March 31, 2022. https://www.facebook.com/help/188118808357379

[124] Guess, A. et al. (2020). "A digital media literacy intervention increases discernment between mainstream and false news in the United States and India." *PNAS, 117(27), 15536-15545*. https://doi.org/10.1073/pnas.1920498117

[125] Caulfield, "Recalibrating Our Approach to Misinformation."", 2018.

[126] *Ibid*

[127] Charlie Warzel, "Don't Go Down the Rabbit Hole." *The New York Times*. February 18, 2021. https://www.nytimes.com/2021/02/18/opinion/fake-news-media-attention.html (Accessed March 31, 2022).

Instead of relying on somewhat antiquated idea that fostering critical thinking is itself enough to arm people against falling for disinformation, the policy makers should work with experts from different sectors to develop education curricula, tools and public outreach campaigns aiming to provide people with skills necessary to assess the **credibility of information sources in a fast and efficient manner** dictated by the pace of current information environment. Such a task, adapted to the contemporary information environment, can only be accomplished if various dimensions of information literacy are taught integrally and promoted across various public sectors.

This synergistic approach should include a more intense cooperation between actors like education institutions, the academia, the media, civil society, fact-checking and disinformation experts, regulatory and governing bodies, to create a broad front with a narrow focus of teaching **principles of information literacy**, understood here as a combination of digital literacy, media literacy, scientific literacy and possibly political literacy as well - given that conspiracy theories often serve as pseudo-political frameworks which allow their followers to replace real civic engagement with "clicktivism" on social networks.

Credibility/reputation approach could seem counterintuitive and may be misinterpreted as advocating for *ad hominem* fallacy rather than "real" information literacy. But it is really about assessing quality sources in a way that fits the new information environment. Today, all the tools that were once available only to traditionally reputable information sources and used to require considerable resources (professional audio/video production, visual design, capability to reach audiences through print or broadcast, advertising opportunities, etc.) have become more or less available to everyone. Seemingly credible media reports, which may be total fabrications, can be produced at low or no cost through widely accessible applications, which are quickly getting better in producing even simulations like "deep fakes", once reserved only for expensive studio productions.

Scientific knowledge is also being faked - both with the rise of predatory magazines and through opportunistic social media channels where self-proclaimed "researchers" reveal their "discoveries" made entirely outside of the scientific method. These junk information products can, however, easily pass for fact-based science to audiences which lack scientific literacy, just as almost any content can mask itself as professional media content. This is precisely what has been happening on social media networks due to the nature of their incentives for monetization of viral content.

In such circumstances, the reputational dimension of the information source is sometimes the only thing that can help make a distinction between a credible source and a well-packaged conspiracy theory, as everything else about them may look exactly the same to a viewer who does not possess good information literacy skills.

The education system should also become more attuned to the information needs of the modern world and more responsive to the disinformation trends detected by academic research and anti-disinformation practitioners. Many phenomena related to the STEM fields are becoming increasingly difficult to understand for people who do not hold degrees in those areas and are being exploited by conspiracy theorists who profit from offering bogus explanations for them. But these processes are also affecting the "old" and established knowledge and we are seeing things like mRNA vaccines being questioned together with condensation trails of airplanes (interpreted as "spraying from the air" by conspiracy theorists) - or even curvature of the Earth which is denied by the "Flat Earth" movement that has been spreading across the globe.

These and similar topics which had already become targets of conspiratorial narratives should be covered in-context within the elementary and secondary school system, putting emphasis on real-life problems that such beliefs and misunderstanding of science may and have caused. Education about conspiracy theories and disinformation narratives should itself be included in the school system, so that the school-aged children are equipped with knowledge framework that will inoculate them against such narratives, but also with explanatory tools they can use to help their older family and community members better understand the phenomena targeted with disinformation that they may be inclined to believe in, as there is a clear generation gap in the ability to assess the credibility of such claims. The importance of peer-education should also not be overlooked, as societal pressure can be an important factor in accepting, but also in reevaluating harmful beliefs and ideas.

Finally, additional research is needed to understand such complex phenomena like the belief in conspiracy theories and how it relates to many other factors not covered by this paper. This and other research should be used to inform and update the long-term policies to build resilience against disinformation.

INFORMATION CAMPAIGNS: PREVENTING THE ROOTING OF DISINFORMATION NARRATIVES AND CONSPIRACY THEORIES

While cross-sector policies are required to produce long-term effects in building resilience and improving information literacy, crises like the pandemic warrant a more targeted and faster response.

Information campaigns should be launched in a timely manner and address potential weak spots in the society's understanding of new, critical or volatile situations which are known to be fertile ground for the spread of misinformation. In the specific case of the Covid-19 pandemic, it was not hard to predict that one of the main targets of disinformation was going to be immunization against the disease. The existence of antivaccination movements has been well documented and their heightened activity clearly visible to the public from the very beginning of the pandemic.

This has left enough time for the official institutions to prepare an adequate response - one that would be aimed at inoculating the public against disinformation. The need for such a response was very visible in this research as well. One prominent indicator of that is the high ranking of Alen Šeranić, the Health Minister of Republika Srpska, as a trusted and credible source of information about the pandemic (both in this and the Ministry's own research).

Consistent media presence of a minister who is also an expert (epidemiologist) speaking from the position of institutional establishment and providing timely, adequately presented information, was received positively and did have an impact on public opinion and possibly on behavior - as most of the respondents who chose to mention Šeranić as a credible source were vaccinated. However, having one official stand out in this way is far from enough to create an adequate shield against disinformation which is being spread through multiple channels with far greater speed, intensity and reach than the official information.

As noted by Lewandowsky and others, "inoculation" approach has been shown to work much better than attempts to contain disinformation and conspiratorial narratives once they take root in a group or a society.[128] Preparing the public in advance for the misleading or false narratives targeting vaccines would surely have reduced the acceptance of such ideas and made it more clear to the people that there is, in fact, a scientific consensus on both the disease and the vaccines and that this is the safest and most efficient way to fight the spread and mortality induced by the pandemic.

For a strategy like this to be possible, an early warning system needs to be established, where experts and practitioners from different fields would have a functional mechanism to raise awareness and get attention from decision makers when they see signs of disinformation trends gaining strength. Cross-sector cooperation driven by the public institutions but welcoming to actors like civil society, the media, scientific community, etc. is a crucial precondition for the success of such efforts.

Research-based approaches should be applied here as well, as different demographics can be more inclined to believe in some conspiracy theories and information campaigns should be catered to those which are most at risk of falling prey to such disinformation narratives. Identifying which specific groups are more vulnerable, what type of messaging they respond to and what their information and communication habits are, can be of enormous benefit to successful inoculation against acceptance of conspiratorial and other harmful narratives.

CONTAINMENT STRATEGIES: CHANGE OF BEHAVIOR

As seen in this research, once they are adopted, conspiratorial beliefs may become persistent, entrenched and very hard to tackle in a rational manner, i.e. by providing the "believers" with facts, or pointing out logical inconsistencies in their belief systems. Attempting to affect the change of such beliefs does not seem like a worthwhile effort with a high chance of success, unlike the information campaigns started in advance.

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[128] Lewandowsky, S. et al. (2021). (publication). *The COVID-19 Vaccine Communication Handbook. A practical guide for improving vaccine communication and fighting misinformation.* SciBeh. https://sks.to/c19vax Accessed March 31, 2022.

However, in situations where harmful beliefs are already adopted by a significant number of the population, there should be efforts to address them in a meaningful way to the extent possible. In the case of acceptance of antivaccination conspiracy theories, future research, possible interventions and information strategies could be more focused on the gains that a person could have from vaccination - whether it is the ability to travel, the possibility to enjoy entertainment events with other people, to work, to access certain public spaces, or something else. Most of the materials tested in focus groups, as well as the official appeals to vaccinate, were related to negative things that could happen to people if they do not get vaccinated, rather than stressing the positive effects of such a decision.

The way that the messages on vaccines and the pandemic are presented is very important, especially for the outcomes of health-related behaviors. Having in mind that most participants - mostly people who have already accepted beliefs in conspiratorial narratives about vaccines - were not sure whether it is more dangerous to get infected or to get vaccinated, it does not seem that facing them with the possible disease outcomes would be beneficial in terms of changing their behavior, and certainly not their beliefs. Modern cognitive science says the same: loss-framed messages (those that emphasize the cost of not performing an action) are more effective when promoting illness-detecting (screening) behaviors, but that the gain-framed messages (those that emphasize the benefits of performing an action) are more effective when promoting health-affirming (prevention) behaviors. [129] Finding clear everyday benefits from vaccination, ones that can affect everyday life, could prompt more people to get vaccinated.

It should be considered that the persuasion tactics with populations which have already adopted conspiratorial narratives, and potentially made harmful behavior choices, should aim to be practical and "superficial" more than to affect the way of thinking at a deep personal level. This means that those informational tactics and interventions should aim to change the behavior and not necessarily the attitudes about the issues targeted with disinformation.[130]

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[129] Rothman, A. J., & Salovey, P. (1997). *Shaping perceptions to motivate healthy behavior: The role of message framing.* Psychological Bulletin, 121(1), 3–19. https://doi.org/10.1037/0033-2909.121.1.3

[130] Additional data gathered through this research is available for research purposes upon request. The requests for access to the data folder should be sent at info@zastone.ba, with information about the researcher and/or their institution and the intended research purpose.

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ADDENDUM

1) Short statements used to calculate the index of belief in conspiracy theories

CONSPIRATORIAL STATEMENT	CONTROL STATEMENT
In the past few decades, there has been an increase in autism in children, which is probably due to vaccinations.	Most of the foods we eat are genetically modified.
Vaccines given before the war were safer than they are today.	Many pharmaceutical companies have had to pay compensation to people who have been harmed by their improper practices.
Unvaccinated children are healthier than vaccinated children.	Many infectious diseases have been eradicated thanks to vaccines.
HIV was made in a laboratory.	Vaccines can rarely have serious side effects.
HIV was deliberately released into the population to destroy certain groups of people.	The privatization of state-owned enterprises has served the personal enrichment of individuals.
Cures for many severe diseases exist in nature, but the pharmaceutical industry suppresses them because they cannot make money.	The Chinese authorities did not publish all the facts related to the spread of coronavirus in a timely manner.
With the help of genetically modified food (GMO) that shortens human life, the world's elite seeks to control population growth on Earth.	Anti-pandemic measures were random and illogical.
Vaccines contain heavy metals that impair the health of those vaccinated.	Vaccines are not 100% effective in preventing the spread of Covid-19 disease.
The HAARP system was created to control time and people.	World governments fail to address global warming due to economic interests.
There is a cure for cancer, but it is hidden from the public.	Greenhouse gas emissions and global warming threaten life on Earth.
Josip Broz Tito was actually a foreign agent.	5G technology will improve the speed and quality of telecommunications.
NATO member states have devices that can influence the weather.	

Mass protests are never spontaneous gatherings, they are controlled from hidden centers of power.	
World intelligence agencies are trying to manage political affairs in BiH and its surroundings.	
Yugoslavia fell apart because that was the plan of the great powers.	
Using depleted uranium ammunition during the 1990's bombing led to an increase in malignant diseases in this area.	
Wearing masks during a pandemic is part of a plan to enslave the population.	
"Whistleblowers" who talk about the real dangers of vaccination risk their safety and even their lives.	
The pandemic is just an excuse to introduce a 5G network.	
Coronavirus does not exist, the real cause of Covid-19 disease is spraying from the air.	
The pandemic is part of a secret plan to reduce the global population.	
Autopsies of Covid-19 patients are prohibited because they would show that the virus does not exist.	
The pandemic is the result of an agreement between a small group of powerful people who manipulate world events.	
Scientists have never isolated the SARS-CoV-2 virus (coronavirus).	
The real cure for Covid-19 is hidden from the public.	
Bill Gates uses the coronavirus as an excuse to implant chips and monitor people through vaccinations.	
The US military has developed the coronavirus as a biological weapon.	
There is a link between 5G technology and coronavirus.	
Politicians vaccinated in front of the camera do not get a real vaccine but a placebo.	
People worldwide are fighting against tyrannical anti-Covid measures in street protests.	
The Covid-19 pandemic is part of Agenda 21/2030 and other plans to establish the New World Order.	
Coronavirus does not really exist.	

The disappearance of bees is associated with the 5G radiation	
The traces we see in the sky left by airplanes, chemtrails, contain dangerous substances like war poisons or heavy metals.	
Some TV reports we watch on world news channels (CNN, BBC) are actually staged and do not show real events.	
The arrival of migrants from African and Asian countries is part of a plan to change the ethnic structure of the population in this area through settlement.	
Demolition of the World Trade Center in New York on September 11, 2001, was organized by the American secret services.	
Movies, TV series, music tracks, and public events often contain dark symbols that try to influence our subconscious.	
A secret organization aims to destroy nation-states and impose "the New World Order".	
Jews control the world's most important event.	
Everyone who has a computer connected to the Internet is secretly monitored and kept under unauthorized surveillance.	
The Holocaust (Nazi genocide of Jews) is exaggerated.	
Evidence of the existence of aliens is hidden from the public.	
A small group of people is responsible for all major world events, such as wars, protests, changes of government.	
Non-governmental organizations are usually just a cover for spying on and undermining the government in our country.	
People like George Soros dictate the policies of many world governments.	
Families like Rockefeller and Rothschild control world affairs from the shadows.	
There is a "Kabbalah" that rules the world and secretly commits unimaginable crimes, especially against children.	

2) Color code for statistical deviations presented in the table

Positive deviation (above average)

High deviation

Medium deviation

Low deviation

Negative deviation (below average)

Low deviation

Medium deviation

High deviation