

COVID-19 Vaccine Opposition in the United States:
Pseudomedical Influencers and Antivaccine Astroturf Groups

An STS Research Paper
presented to the faculty of the
School of Engineering and Applied Science
University of Virginia

by

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May 11, 2023

On my honor as a University student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

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The World Health Organization declared COVID-19 a global pandemic on March 11th, 2020. Four days later, U.S. states began to implement statewide shutdowns to prevent the spread of the infectious, airborne virus. Despite social distancing and masking efforts, the CDC estimates that 350,000 Americans died due to COVID in 2020 (CDC, 2021a). The Food and Drug Administration (FDA) issued an emergency use authorization (EUA) for Pfizer's COVID-19 vaccine on December 11th, 2020, followed by a Moderna EUA 7 days later (CDC, 2022b). An EUA improves access to vaccines during public health emergencies; all vaccine EUAs require final or interim analysis of a phase-3 clinical efficacy trial of over 3,000 vaccine recipients, demonstrating that the known and potential benefits of the vaccine outweigh the known and potential risks (FDA, 2020). Receiving 2 or 3 doses of a COVID-19 vaccine is associated with a 90% reduction in risk for emergency ventilation and death, and models estimate that non-ICU hospitalization, ICU hospitalization, and deaths decrease by 64%, 66%, and 69% respectively (Moghadas et al., 2021; Tenforde, 2022).

While many Americans welcomed the vaccines and the mandates, others distrusted them. Reasons included perceived infringement of personal rights, distrust in vaccine efficacy, and fear of unintended or even malicious side effects. In the U.S. since 2020, individuals and organizations that distrust public health guidance for the prevention of the transmission of coronavirus have thrived in the spotlight. The "Disinformation Dozen" are 12 well-known figures who promote and spread antivaccine content on digital platforms (CCDH, 2021). They include social media influencers, lawyers, and alternative medicine proponents. They even include physicians, such as Joseph Mercola and Sherri Tenpenny. Together they use their credentials, real or alleged, to present themselves as experts and sow distrust in consensus health guidance. These physicians represent an extreme minority of a field that overwhelmingly

supports COVID vaccination. “Dozen” members often profit off of their propaganda and fund anti-vaccine organizations that can be nicknamed as astroturf groups, such as the National Vaccine Information Center (NVIC) and Children’s Health Defense (CHD). CHD hosts rallies to protest vaccine mandates, is involved with numerous lawsuits to accomplish its alleged goal of public safety, spreads misinformation through published articles and social media posts, and uses fear-inducing and decontextualized rhetoric to target black and minority groups. CHD’s chairman, “Dozen” member Robert F. Kennedy Jr., uses his influential family name and authority to fundraise and advocate for CHD.

Literature Review

Maciuszek et al. (2021) found that opponents of vaccination discount the knowledge of vaccination proponents, and vice versa. The explanation may be the psychological concepts of ingroup favoritism, outgroup negativity, or naive realism. Murphy et al. (2021) found that vaccine hesitant individuals shared similar psychological characteristics of self-interest, distrust of experts and authority, strong religious beliefs, as well as conspiratorial and paranoid beliefs. Lu and Sun (2022) show that antivaccine comments on Facebook promote psychological reactance to pro-vaccine posts, increasing vaccine hesitancy in the viewer. Antivaccine comments also induce bandwagon phenomena and increase the belief in perceived vaccine rejection.

Cowan et al. (2021) found evidence suggesting that political party affiliation has become a source of identity that shapes personal decision making. This partisan identity is a bigger factor than differences in demographics, institutional trust, or concern about COVID-19. Getting a COVID vaccine may now be viewed as something a Democrat may do, whereas a Republican

would not. Bolsen and Palm (2022) theorize that the COVID-19 vaccine itself is politicized due to its development and approval process coinciding with the presidential campaign and election of 2020.

Yaqub et al. (2014) shows that professional advice is the most common influencer of vaccination beliefs, emphasizing the importance of trust in medical professional and patient relationships. Dew & Donovan (2020) found that black Americans demonstrate higher levels of mistrust in the medical system than white Americans, possibly due to a collective memory of past traumatic experiences. The U.S. healthcare and research systems failed black men during the Tuskegee syphilis study, in which the disease progression of syphilis was studied in black men who were withheld informed consent and treatment over the course of 40 years. Additionally, the mortality rate of black women from breast cancer is estimated to be 41% higher than of white women in the U.S.; this inequity had lead to mistrust towards the health care system with underlying themes of being “treated like a guinea pig” and “maltreated because of race” (Ferrera et al., 2016). Black Americans are indeed 5 times more likely than white Americans to think vaccines are unsafe (Dew & Donovan).

Free Choice & Right Infringement

Many Americans oppose the COVID vaccines as government intrusion of bodily autonomy. According to one, for example, they are a “big government thing where they’re trying to control the public” (Burnett, 2022). According to another, “you shouldn’t be able to force that stuff on people” (CNN, 2021). Some vaccine opponents have adopted the common abortion rights slogan “My Body, My Choice” to clearly highlight their view that government vaccine mandates violate civil liberties. In an April 2022 rally in Los Angeles, people wore shirts, flew

flags, and sold buttons with the slogan outside of City Hall to protest vaccine requirements for healthcare workers (Bluth, 2022).

Lawmakers who oppose mandatory vaccines citing reasons of personal autonomy can change COVID vaccination policies. Thirteen states, most of them predominantly Republican, ban vaccine mandates for employees (LeadingAge, 2022). Texas Governor Greg Abbott has said the vaccines are “safe, effective, and our best defense against the virus,” but argues that vaccination must be “voluntary and never forced” (Allen, 2021). Florida Governor Ron DeSantis states that “nobody should lose their job due to heavy-handed COVID mandates” (Staff, 2021). These justifications for COVID vaccine opposition suggest the belief that vaccine mandates are an infringement of civil liberties. These beliefs neglect to consider that COVID-19 and its associated vaccines have consequences not just for the individual, but for the community and public health.

Safety Concerns

Some Americans oppose the COVID vaccines for uncertainty of vaccine efficacy. In addition to reasons of personal autonomy, DeSantis opposes the vaccines on grounds of safety and efficacy because they “have not gone through enough testing and clinical trials” (Sarkissian, 2022). Ohio state representative Scott Lipps states “until we have the proper studies and understand what we are putting in our body, we’ve got to slow it down” regarding COVID vaccine rollouts (AJ+, 2021). According to a survey of 1,500 Americans conducted by YouGov, 89% of COVID vaccine rejectors believe the vaccine was “rolled out with inadequate testing” (Frankovic, 2021).

Other Americans distrust the vaccines because they suspect secret and malicious side effects intended by the government and pharmaceutical industry, a fear often rooted in misinformation. The YouGov survey also revealed that 50% of vaccine rejectors believe the vaccine contains a microchip and 49% believe the vaccine causes autism (Frankovic, 2021). One person believes that the vaccines are “snapping the DNA in half” (CNN, 2021). Another believes the vaccines are a “de-population tool” with “malevolent stuff in it” (Burnett, 2022). Bill Gates is commonly thought to be behind this depopulation tool; this idea stems from the 2010 Gates TED Talk in which he states the global population can be lowered by “perhaps, 10 or 15 percent” with “a really great job on new vaccines, health care, and reproductive services” (Gates, 2010). Because Gates associated vaccines with a future global population decline, some misunderstood or abused his statement to suggest that the vaccine itself directly increases mortality. In fact, Gates’ point was that because access to vaccines reduces child and adult mortality, it also reduces replacement births and contributes to adult survival beyond the childbearing years. Because both trends reduce population fertility (PM, 2023), they can eventually reduce total population.

Pseudomedical Influencers

According to an analysis performed by the Center for Countering Digital Hate (CCDH), antivaccine accounts have a total following of 59 million across social media platforms such as Instagram, Twitter, Facebook, and Youtube as of December 2020 (CCDH, 2021). 12 well-known figures across these platforms, called the “Disinformation Dozen” by their critics, “produce 65% of the shares of anti-vaccine misinformation” found on Facebook and Twitter and “produce up to 73% of Facebook’s anti-vaxx content” (Bond, 2021; CCDH, 2021). These individuals were

identified through their large followings, high volumes of antivaccine content, or rapidly growing accounts at the time of the analysis.

Prominent “Disinformation Dozen” member Dr. Joseph Mercola is an osteopathic physician and alternative medicine businessman. Mercola stated on his podcast “Take Control of Your Health” that his “favorite intervention for COVID-19” is “nebulized hydrogen peroxide” (DOTB, 2020). This podcast has been shared over 4,600 times on Facebook (CCDH, 2021). Many health professionals have spoken out against this remedy, the Asthma and Allergy Foundation of America stating that hydrogen peroxide “can be toxic if ingested or inhaled” and “can cause respiratory irritation” (AAFA, 2021). Mercola argues on a video posted on BitChute and viewed on Facebook over 95,700 times that the COVID vaccine is an “experimental gene therapy” that will “prematurely kill large amounts of the population” and “disable exponentially more” (TVP, 2022; Mercola, 2021).

“Dozen” member Dr. Sherri Tenpenny is an osteopathic physician, antivaccine activist, and conspiracy theorist that propagates misinformation about COVID-19 and its associated vaccines through various social media platforms. Tenpenny tweets regarding masks that “the longer you wear one, the more unhealthy you become” (CCDH, 2021). Tenpenny declares on a far-right radio show that the goal of the vaccines is to “depopulate the planet,” and the ones who survive will “turn into transhumanist cyborgs” that can be “externally manipulated by 5G, by magnets, by all sorts of things” (Tenpenny, 2021a). Invited as an expert witness by Republicans at an Ohio statehouse hearing to debate a bill around civil liberties and vaccines, Tenpenny claims that the vaccines are “magnetized,” claiming of those vaccinated that “you can put a key on their forehead, it sticks” (NBC News, 2021). Tenpenny’s views have underlying Christian themes; she links the COVID-19 disease to “evil spiritual forces in the heavenly realm” and

emphasizes the need of those vaccinated to “repent for the sin of fear” on a video broadcast (Tenpenny, 2021b).

Physicians such as Mercola and Tenpenny who oppose COVID-19 vaccination represent a small minority of the medical field. A survey administered by the American Medical Association finds that 96% of polled physicians have been fully vaccinated for COVID-19; of those who are not yet vaccinated, an additional 45% plan to do so (AMA, 2021). The Virality Project has nicknamed individuals such as Mercola and Tenpenny as “pseudomedical influencers (PMIs)”, those with medical backgrounds who “leverage their credentials as badges of authority while undermining vaccines” despite the medical implausibility of their claims (TVP, 2022). Mercola indeed brands himself as “drmercola” on his verified Instagram account (Instagram, 2023). While Mercola’s website claims he is a “board certified family medicine osteopathic physician” that is “fully licensed to prescribe medication and perform surgery in all 50 states”, his doctoral license is active only in Illinois and he has not been trained in immunology, infectious disease, or epidemiology (Mercola, 2023; Docinfo, 2023).

Critics of Pseudomedical Influencers

Numerous physicians and pro-vaccine individuals have spoken out against the vaccine misinformation spread by PMIs. Surgical oncologist David Gorski argues that Mercola mixes “boring, sensible health advice” with “pseudoscientific advice” in a way that confuses those without a medical background (Satija & Sun, 2019). No License for Disinformation (NLD) is a grassroots coalition composed of physicians, nurses, parents, and disability advocates organized to “protect the public from the threat of medical disinformation”. NLD claims that the “lies, distortions, and baseless conspiracy theories” spread by PMIs have caused “unnecessary

suffering and death” and are “prolonging the pandemic” (NLD, 2021). Cleveland native and accountant Rachel Eaton states that Tenpenny is “dangerous” and has “pulled a lot of people down this rabbit hole of misinformation” (Timberlake, 2021).

Business information provider Dun & Bradstreet estimates that Tenpenny’s medical clinic’s revenue is \$4.04 million annually; Tenpenny also profits from podcast subscriptions, webinars, and public speaking centered around antivaccine activism (Dun & Bradstreet, 2021). AFP Fact Check is an online service designed to fight misinformation through thorough verification of multiple sources; AFP claims to be “free from bias, educational and based on evidence” (AFP, 2023). AFP speculates that Tenpenny developed her anti-COVID vaccine enterprise at the same time she owed the IRS around half a million dollars, according to IRS tax liens (Timberlake, 2021). A Facebook page named “‘Doctor’ Tenpenny: Getting Rich off of Stupidity” mocks Tenpenny and accuses her of profiteering off of vaccine misinformation (Facebook, 2023).

While some PMIs thrive on social media undetected by regulatory agencies, others such as Mercola and Tenpenny have received warnings and bans for their COVID-19 misinformation dissemination. The FDA issued a warning to Mercola in February 2021 for advocating and selling “unapproved” and “unauthorized” products for COVID-19 treatments such as vitamin C, vitamin D, and quercetin (Correll, 2021). Prior to the COVID pandemic, Mercola had received 3 FDA warnings for pseudoscientific diagnostic and treatment products (Walker, 2005; MacIntire, 2006; Silverman, 2011). Upon new 2021 Youtube policy to remove antivaccine propaganda from its platform, Mercola, Tenpenny, and other PMI accounts were banned (Alba, 2021). While other social media platforms such as Facebook, Twitter, and Instagram have labeled some posts as false or removed specific pages, the accounts of Mercola and Tenpenny are still operating.

Antivaccine Astroturf Groups

Astroturfing is the practice of creating the illusion of widespread grassroots support for a candidate or organization. In reality, astroturf groups are formed and supported mostly by wealthy individuals, corporations, or lobbyists with strong agendas (Longley, 2020). Astroturfing takes advantage of psychological conformity or bandwagoning, in which people align their beliefs and behaviors with group values (Kelly, 2023). Astroturf groups often are named to appeal to popular public values and appear trustworthy and knowledgeable. These groups often rename or re-brand themselves when exposed or confronted by true grassroots movements.

The National Vaccine Information Center (NVIC)

NVIC, originally founded as Dissatisfied Parents Together in 1982, is a longstanding antivaccine nonprofit organization. NVIC claims to be dedicated to “preventing vaccine injuries and deaths” and advocates for “voluntary vaccine choice” (NVIC, 2022). NVIC has been criticized for its website Medalerts.org, which republishes the CDC’s Vaccine Adverse Event Reporting System data (NVIC, 2023). However, Medalerts.org does not republish CDC warnings that the reports are not verified (Goldin, Gregory, & McDonald, 2021). This allows NVIC and other antivaccine organizations to report or propagate false claims while appearing sanctioned by the CDC. While NVIC claims to be a grassroots organization supported by worried parents and small donations, Joseph Mercola accounts for 40% of NVIC’s funding, amounting to \$2.9 million since 2009 (Satija & Sun, 2019).

NVIC posted on Facebook “this is not how vaccine testing normally happens” and “big pharma will profit from the coronavirus” in March of 2020, along with over 300 other posts concerning COVID and its vaccines from February to April. Kalichman et al. (2021) identified

NVIC and three other individuals and groups, one of whom is Dr. Sherri Tenpenny, as leading propagators of misinformation and conspiracy theories disguised as legitimate sources of medical information. A Facebook analysis revealed that this early deception outpaced public health information from the CDC and FDA and hampered the rollout of COVID vaccination (Kalichman et al., 2021). Additionally, a NewsGuard dataset identified NVIC as a Facebook “super-spreader” of “false and unsubstantiated claims about vaccination”; they found that NVIC had 218,539 Facebook Page Likes as of April 2020 (2020, McDonald).

Children’s Health Defense (CHD)

“Disinformation Dozen” member Robert F. Kennedy (RFK) Jr. has chaired CHD since 2015, originally named World Mercury Project until 2018, a nonprofit that issues antivaccine propaganda. CHD claims it values “exposing truth,” “righting wrongs,” and “protecting our future,” according to its website’s main page (CHD, 2022). Digging deeper into the website reveals CHD’s more specific goals of “exposing the truth about vaccine injury” and “exposing fraud and corruption within the CDC and the pharmaceutical industry.” An NBC News analysis identified CHD as one of the three most popular antivaccine fake health news outlets “without medical training or expertise” of 2019 (Zadrozny, 2019). The analysis argues that CHD articles “misinterpret research to stoke fear”, particularly regarding children and pregnant women. However, a CHD representative claims its articles are “meticulously researched” (Zadrozny, 2019).

CHD hosted a rally in Washington, D.C. in January 2022 to protest vaccine mandates and preserve civil liberties. One attendee states that she “struggles to find trustworthy news sources”, and therefore relies “mostly on Children’s Health Defense” (Voght, 2022). This likely common

experience represents confirmation bias preventing individuals from questioning their doubts, and letting themselves become the medium through which misinformation is propagated (Wason, 1960). Journalist Kara Voght states she saw doctors spreading COVID misinformation, such as advocating that ivermectin prevents infection and vaccines cause autism, all while wearing their “physician whites”. RFK Jr. “compared vaccine passports to slavery”, and prominent anti-vax podcaster Del Bigtree “invoked the Nuremberg trials to threaten Dr. Anthony Fauci and the press” (Voght, 2022). Other demonstrators held signs stating “stop the vaccine holocaust” and “vaccines are mass kill bio weapons” (Skolnik, 2022).

CHD has targeted vulnerable black and minority Americans with antivaccine and fear-inducing rhetoric, potentially decreasing vaccination rates among these populations. A published CHD article and accompanying video suggests an analogy to past “historical lapses in public health ethics” in an attempt to tie COVID-19 vaccination with past medical abuses against black and minority groups (CHDT, 2020). CHD argues that the Tuskegee study “should not be dismissed as historical aberration”, and the “would-be recipients” of the vaccines, referring to black Americans, “have every right to be concerned” (CHDT, 2020). CHD video producer Tony Muhammad argued at a prior march that many vaccines have been “genetically modified to attack black and Latino boys” (Merlan, 2017). CHD propaganda often mixes historical fact with conspiracy theories; Muhammad states that “it took a Kennedy to shut down that experiment” referring to former President John. F. Kennedy and the Tuskegee study (Merlan, 2017). This serves to compare President Kennedy shutting down the Tuskegee study to RFK Jr. shutting down vaccinations without providing any historical context. In response, UCLA cardiologist Richard Williams said RFK Jr. is leading a “propaganda movement” and “absolutely racist operation” (Smith, 2021).

RFK Jr. frequently uses his influential family name and legacy to fundraise and advocate for CHD. He boasts that “the benefit of being part of my family” is that “I could get these people on the phone almost instantaneously” referring to top government officials and scientists such as the director of the National Institutes of Health (Smith, 2021). He has invited CHD donors to the Kennedy family compound, promising there is always “plenty of good people” (Smith, 2021). However, many members of the Kennedy family have spoken out against RFK Jr. His sister calls his “lies and fear-mongering...sickening and destructive” and claims that “he does not represent the views...of our family” (Kennedy, 2022). His niece, an internal medicine resident, claims regarding RFK Jr. that “when it comes to vaccines, he is wrong”; she feels the need to speak out because “his name and platform means his views carry weight” (Meltzer, 2020). RFK Jr.’s brother, sister, and niece argue that he has “helped to spread dangerous misinformation” and is “complicit in sowing the distrust of the science behind vaccines” (Townsend, Kennedy, & McKean, 2019).

CHD is involved in numerous litigations and lawsuits that aim to “hold public health agencies responsible by taking legal action” with the goal of stopping “illegal, unethical, and dangerous vaccines” according to their website (CHD, 2023a). CHD files Freedom of Information Act requests, writes amicus briefs - legal documents supplied to uninvolved court cases as advice, and brings lawsuits “against the wrongdoers” (CLS, 2023). CHD’s website lists 23 active lawsuits; examples include against Rutgers University for mandatory COVID vaccinations, against New York State for statewide mask mandates, against the FDA for its use of COVID vaccine EUA’s in children, against Facebook for censorship policies, and many others (CHD, 2023b).

Like pseudomedical influencers Mercola and Tenpenny, CHD has profited since the beginning of the pandemic. Charity filings show that CHD brought in \$6.8 million in 2020, doubling the previous year's revenue (Smith, 2021). Tax filings show that RFK Jr. himself received an almost 40% salary increase in 2019 totalling \$250,000 (Smith, 2021). However, he claims to have “the opposite of a profit motive” and lost “80% of my income” (Smith, 2021). Despite criticizing government agencies such as the CDC and spreading misinformation about COVID and its vaccines, CHD received \$145,399 from coronavirus-related paycheck protection program federal loans in 2020 (FederalPay, 2021).

Conclusion

While Joseph Mercola and Sherri Tenpenny have established antivaccine enterprises and recently profited off COVID vaccine propaganda during critical vaccine development and distribution periods as early as February 2020, they are both still licensed as practicing doctors of osteopathic medicine (eLicense Ohio, 2023; Docinfo, 2023). It took until July 2021 for the Federation of State Medical Boards to release a statement in response to physician COVID vaccine misinformation, in which they threaten “suspension or revocation of their medical license”; however, limited disciplinary action has since been taken (FSMB, 2021). No License for Disinformation specifically formed in response to medical disinformation and urges state medical boards for physician accountability in “violating their professional oath” (NLD, 2021). It is imperative that physicians who intentionally propagate medical disinformation for profit are identified and stripped of their license.

Social media and digital platforms must better enforce policies that prevent the spread of vaccine disinformation, such as the removal of violating accounts and posts. However, even this

would not revert any inaccurate beliefs that have already propagated, and lesser-known platforms lacking misinformation policies such as BitChute, video and podcast broadcasts, rallies and marches, and antivaccine websites still thrive as echo-chambers. Americans must learn how to be critical of the content they encounter by not taking outlandish claims at face value, fact-checking where the information originated from, and avoiding bandwagoning so personal vaccination beliefs and values can be formed.

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