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What are the effects social media has had on the public's trust towards research and scientist: Case on COVID 19

Abstract

This paper aims to perform an analysis on how the conspiracy theories posted on TikTok, have impacted the public's trust towards scientists and research during COVID 19. This pandemic has had a tremendous impact and has negatively shaped attitudes of the public. More specifically, it was observed that due to the public's mistrust towards scientist, negative behaviors prevailed. The main conspiracy theories to be analyzed have been titled as, "COVID does not exist, Chlorine can cure COVID and that the COVID vaccine contains a chip". The findings of this research suggest that accessibility and vulnerability due to age, increases the acceptance of the named conspiracy theories. An analysis of these, will highlight the negative impacts this has on society today.

Introduction

In early 2020, WHO identified a newly found coronavirus in Wuhan, China. On the 30th of January 2020, WHO declared that we are in a Public health emergency of international concern. Soon after that, on the 11th of March 2020, COVID 19 was officially declared a pandemic. This virus, known as COVID 19, has affected millions worldwide and has killed to this day, approximately 5.35 million people. Due to the outbreak of COVID 19, a series of global lockdowns followed, having people stay in their homes for months at end. Subsequently, this caused the use of social media platforms to skyrocket reaching unprecedented numbers. As social media became more popular, an increasing number of people used these platforms as trusted sources to get updated on the latest news and research. This led to a wide range of conspiracy theories to be posted online, which misled many, on what is true or not regarding COVID 19. This can largely be seen in platforms such as TikTok, which grew significantly during the pandemic, with its main target group being Generation Z. The main conspiracy theories which will be analyzed for the purpose of this paper are titled as, "COVID does not exist, Chlorine can cure COVID, the COVID vaccine contains a chip". The research question which this paper aims to answer is, "What negative effects have been created by the named conspiracy theories posted on TikTok?". Thus, the paper dives into the conspiracy theories, and how they increase negative behaviors and negatively shape peoples trust towards scientists and research. Due to these, the negative behaviors increased case by case, which collectively could have a significant

impact on society. The idea that the public is willing and able to trust conspiracy theories, exposes the mistrust that exists towards scientist, during the pandemic.

1. Literature Review

The outbreak of COVID 19 has caused enormous amounts of challenges for the health system worldwide but also caused the death of millions of people. ¹ Due to the outbreak of a new virus, upon research, it was instructed by governments to impose lockdowns which in some cases, lasted for months. During any pandemic or worldwide crisis, people on social media spread awareness, post their opinions and share information they have heard. However, in the case of the COVID 19 pandemic, it was accompanied by the outbreak of the famous infodemic. ² The World Health Organization (WHO) defines this term as, “too much misleading information in physical and digital environments during a disease outbreak [..] which can cause confusion amongst the public, and lead to mistrust towards health authorities”. ³ Most social media users are not scientists and yet, continuously posted information about COVID, which led to a lot of misleading information to be publicly put out. Since this pandemic was something new, people were frightened and rather uneducated on the

¹ Tasnim, Samia, et al. “Impact of Rumors and Misinformation on Covid-19 in Social Media.” *Journal of Preventive Medicine and Public Health*, vol. 53, no. 3, 2020, pp. 171–174., <https://doi.org/10.3961/jpmph.20.094>.

² *Novel Coronavirus(2019-NCoV) - Who*. <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200202-sitrep-13-ncov-v3.pdf>.

³ “Infodemic.” *World Health Organization*, World Health Organization, https://www.who.int/health-topics/infodemic#tab=tab_1.

topic, which made it easier to be manipulated through social media platforms such as TikTok; especially younger audience. Existing literature has explored the reasons why these conspiracy theories are largely believed by the public. Fear has been identified as a key factor, as it caused many to rush to sites and platforms, to find explanations regarding the new unknown. ⁴ It is argued that due to fear, many felt a need to find a source in order to understand what is happening. Moreover, people had a need to satisfy their own curiosity and avoid uncertainty regarding COVID. ⁵ There is extensive research on the detection of misinformation cases on platforms such as Twitter and Facebook. These posts are then used in order to promote scientists and the dissemination of such misconceptions. ⁶ Furthermore, mainly using quantitative techniques, existing literature highlights the consequences on human behavior due to the prevailing misinformation posted about COVID 19 on social media. ⁷ ⁸ However, upon research it is evident that there is wide under-representation of misinformation cases on TikTok. The only article found, focusing on that

⁴ Bavel, Jay J. Van, et al. "Using Social and Behavioural Science to Support COVID-19 Pandemic Response." *Nature News*, Nature Publishing Group, 30 Apr. 2020, <https://www.nature.com/articles/s41562-020-0884-z>.

⁵ Douglas, Karen M. "Covid-19 Conspiracy Theories." *Group Processes & Intergroup Relations*, vol. 24, no. 2, 2021, pp. 270–275., <https://doi.org/10.1177/1368430220982068>.

⁶ Kim, Seoyong, and Sunhee Kim. "The Crisis of Public Health and Infodemic: Analyzing Belief Structure of Fake News about COVID-19 Pandemic." *Sustainability*, vol. 12, no. 23, 2020, p. 9904., <https://doi.org/10.3390/su12239904>.

⁷ Mohammadi, Mohammad Reza, et al. "The Role of Public Trust and Media in the Psychological and Behavioral Responses to the Covid-19 Pandemic." *Iranian Journal of Psychiatry*, 2020, <https://doi.org/10.18502/ijps.v15i3.3811>.

⁸ Pummerer, Lotte, et al. "Conspiracy Theories and Their Societal Effects during the COVID-19 Pandemic." *Social Psychological and Personality Science*, vol. 13, no. 1, 2021, pp. 49–59., <https://doi.org/10.1177/19485506211000217>.

platform, requires a hefty subscription fee to access.⁹ Tiktok has been widely left out of the discussion, despite its 85.3% increase of users in the US alone, in 2020 and approximately 100 million active US users.^{10 11} This paper, through a qualitative analysis, aims to combine and analyze the negative effects social media has had on the public's trust towards research and scientists, by focusing on the conspiracy theories posted on TikTok. This virus was and still is killing people and the inability to identify misinformation potentially harms the research process.

2. Methodology

As mentioned above this paper focuses on the effects social media has had on the public's trust towards research and scientist. More specifically, it will look at the case of COVID 19 and how the chosen conspiracy theories have negatively impacted the public's trust. At first, there will be an identification of these conspiracy theories. This collection of posts has been selected using an already existing account. The selection has been made by searching throughout different posts on TikTok, using key references such as #coviddoesnotexist or #covidvaccine. These links will be provided as

⁹Basch, Corey H., et al. "A Global Pandemic in the Time of Viral Memes: COVID-19 Vaccine Misinformation and Disinformation on TikTok." *Human Vaccines & Immunotherapeutics*, vol. 17, no. 8, 2021, pp. 2373–2377., <https://doi.org/10.1080/21645515.2021.1894896>.

¹⁰ "Topic: Social Media Use during Coronavirus (COVID-19) Worldwide." *Statista*, <https://www.statista.com/topics/7863/social-media-use-during-coronavirus-covid-19-worldwide/#dossierKeyfigures>.

¹¹ *Tiktok by the Numbers (2021): Stats, Demographics & Fun Facts*. <https://www.omnicoreagency.com/tiktok-statistics/>.

primary sources in the analysis. The named conspiracy theories will be individually analyzed, aiming to show their context and the consequence they caused. The research question this paper aims to answer is:

RQ1: what are the consequences that the named conspiracy theories posted on TikTok created?

The aim of this research is to highlight how important it is for us as a society to trust our scientists rather than random social media users. This will be done by highlighting the importance of trusting our scientists and how proper research on topics can prevent us from being manipulated by false information. For the purpose of this paper, “fake news is defined as “fabricated information that mimics news media content in form but not in organizational process or intent”.¹²

This paper proposes 2 hypotheses:

H1: Conspiracy theories posted on TikTok have negatively affected the public’s trust towards scientists and research

H2: Conspiracy theories posted on TikTok have neither positively or negatively affected the public’s trust towards scientist and research

It is important to keep in mind that this paper has some limitations.

Firstly, this research focuses only on one social media platform and looks at its respective age range. More specifically, TikTok’s main audience is generation Z, thus people born between 1997-2012.¹³ While the research

¹² Lazer, David M., et al. “The Science of Fake News.” *Science*, vol. 359, no. 6380, 2018, pp. 1094–1096., <https://doi.org/10.1126/science.aao2998>.

¹³ “Age Range by Generation.” *Beresford Research*, 14 Oct. 2021, <https://www.beresfordresearch.com/age-range-by-generation/>.

findings are based on TikTok alone, other key platforms with high following percentages are left out, such as Facebook, Twitter and Instagram. Future research can look into these platforms to base their study on.

Secondly, because TikTok's main audience is generation Z, there are a lot of young children who are more susceptible in believing these conspiracy theories and thus are in need of larger policing. So, future research, can look into the affect social media platforms have on different age groups and even compare the methods used to fight off misinformation.

At first, when researching, the main platform looked at was Twitter, however Twitter has now censored a lot of the tweets which gave false information regarding COVID19. Since this papers aim is to show the negative effects social media has had; Twitter could not be used. However, other research can look into the positive effects, and how Twitter has been able to fight off the spread of conspiracy theories, and the impact this has had on the public's trust and knowledge.

3. Analysis

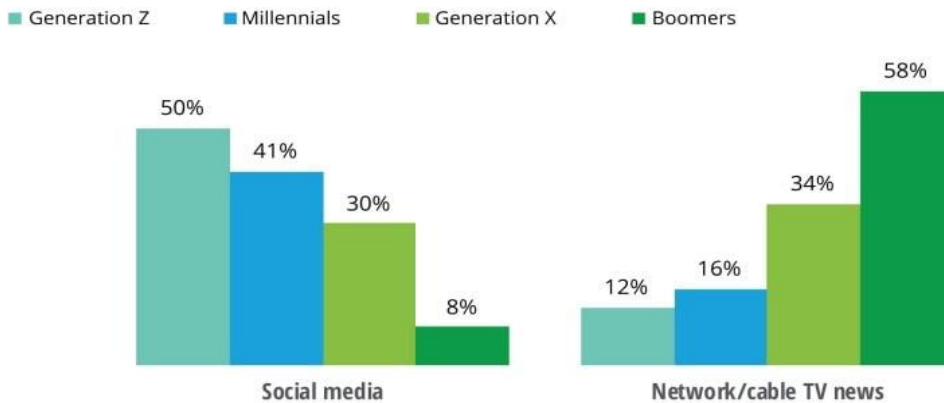
Research regarding social media use, showed that Generation Z uses social media more than TV, as a preferred way to stay updated on news.

More specifically, as shown through the graph taken from the study, the latter was measured at 12% and the former at 50%.

FIGURE 6

Different generations consume news in different ways

Most preferred way to stay updated on news and current events



Source: Digital media trends, 15th edition.

Deloitte Insights | deloitte.com/insights

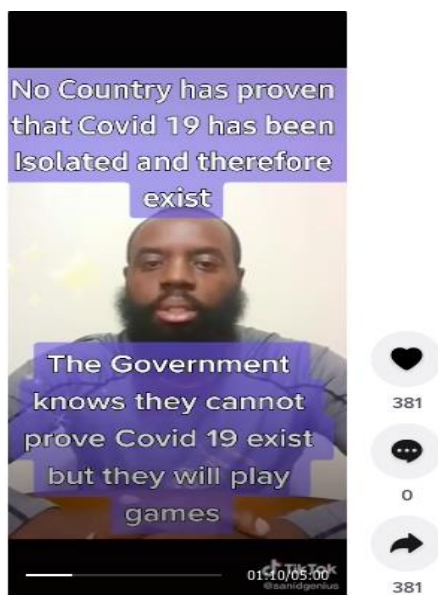
Source : Westcott, Kevin, et al. "Digital Media Trends, 15th Edition." Deloitte Insights, Deloitte, 7 May 2021, <https://www2.deloitte.com/us/en/insights/industry/technology/digital-media-trends-consumption-habits-survey/summary.html>.

3.1. COVID DOES NOT EXIST

One of the major conspiracy theories that was rather popular during the early stages of the pandemic, is that COVID 19 does not exist. This conspiracy theory was widely believed, and it went against everything the scientists and research would tell us. More specifically, it caused many to disregard the measures set by the government to battle COVID. These measures include, the use of face mask and social distancing.¹⁴ Moreover,

¹⁴ Oleksy, Tomasz, et al. "Content Matters. Different Predictors and Social Consequences of General and Government-Related Conspiracy Theories on Covid-19." *Personality and Individual Differences*, vol. 168, 2021, p. 1-7., <https://doi.org/10.1016/j.paid.2020.110289>.

despite news portrayal on TV and official sites, many continued to support the idea that COVID does not exist and has been created by the government. The TikTok included in the link provided, (<https://vm.tiktok.com/ZM83h26cb/>) has been created by a male, who claims that COVID does not exist. He argues that “no country has proven that COVID 19 has been isolated and therefore exists”.¹⁵ He claims that he requested documents from the government, in order to provide him information, regarding COVID 19, however he still has not received them.



Source: "Truth Variant on TikTok." TikTok, <https://vm.tiktok.com/ZM83h26cb/>.

The screenshot provided is from the specific TikTok mentioned. As seen, it has been liked by 381 different people and shared another 381 times. Just like any other social media platform when you like a post, it means you agree or are a fan of the content. When people see this content, especially at a younger age, seeing an adult, talk about this issue with such strong

¹⁵ "Truth Variant on TikTok." TikTok, <https://vm.tiktok.com/ZM83h26cb/>.

statements, it gives the impression that maybe he is right. It has been proven by previous studies that during times of crises, such as a pandemic or financial crisis, people are more inclined to believe conspiracy theories.¹⁶ This happens because people look for explanations to find meaning to an unknown situation.¹⁷ It is important to mention, that the abandoning of policies suggested by scientists, can possibly be linked to the increase of COVID cases in each country, since the safety measures are not followed.

3.2. CHLORINE CAN CURE COVID

Another misconception that had tremendous negative effects, was that chlorine can cure COVID. This specific conspiracy was posted throughout social media platforms including TikTok. It was assumed, that by either drinking or injecting bleach you can cure or treat COVID. Health agencies have warned the individuals who self-treat themselves using bleach, as it can be hazardous for them. It has been determined that chlorine consumption can potentially lead to several life-threatening conditions, such as liver failure.¹⁸ It was mistakenly said by former president Donald Trump, that you can inject chlorine, and despite scientists saying that this

¹⁶ Oleksy, Tomasz, et al. "Content Matters. Different Predictors and Social Consequences of General and Government-Related Conspiracy Theories on Covid-19." *Personality and Individual Differences*, vol. 168, 2021, p. 1-7., <https://doi.org/10.1016/j.paid.2020.110289>.

¹⁷ Oleksy, Tomasz, et al. "Content Matters. Different Predictors and Social Consequences of General and Government-Related Conspiracy Theories on Covid-19." *Personality and Individual Differences*, vol. 168, 2021, p. 1-7., <https://doi.org/10.1016/j.paid.2020.110289>.

¹⁸ Reimann, Nicholas. "Some Americans Are Tragically Still Drinking Bleach as a Coronavirus 'Cure'." *Forbes*, Forbes Magazine, 10 Dec. 2021, <https://www.forbes.com/sites/nicholasreimann/2020/08/24/some-americans-are-tragically-still-drinking-bleach-as-a-coronavirus-cure/?sh=3d3ee766748d>.

is dangerous, people still used this method.¹⁹ After this statement went public, within a few hours, it was discovered that the New York poison control center received 30 calls.²⁰ People that trust conspiracy theories more than health officials usually are characterized by lack of faith towards authority.²¹ This causes them to reject facts which leads to potentially risky behavior, such as consumption of bleach. When kids and teenagers, see adults consuming chemicals like this on social media, it can encourage and influence them to do the same. Many times, young adolescence, do not get in the process of fact checking everything they see. This is dangerous not only because of the pandemic but for other future circumstances.

3.3. COVID VACCINE CONTAINS A CHIP

One of the most widespread conspiracy theories on TikTok was that the COVID vaccine contains a chip. There are plenty of examples of TikToks which voice this conspiracy theory, however for the purpose of the study, there will be a focus on one.²²

¹⁹ Reimann, Nicholas. "Some Americans Are Tragically Still Drinking Bleach as a Coronavirus 'Cure'." *Forbes*, Forbes Magazine, 10 Dec. 2021, <https://www.forbes.com/sites/nicholasreimann/2020/08/24/some-americans-are-tragically-still-drinking-bleach-as-a-coronavirus-cure/?sh=3d3ee766748d>.

²⁰ Reimann, Nicholas. "Some Americans Are Tragically Still Drinking Bleach as a Coronavirus 'Cure'." *Forbes*, Forbes Magazine, 10 Dec. 2021, <https://www.forbes.com/sites/nicholasreimann/2020/08/24/some-americans-are-tragically-still-drinking-bleach-as-a-coronavirus-cure/?sh=3d3ee766748d>.

²¹ Oleksy, Tomasz, et al. "Content Matters. Different Predictors and Social Consequences of General and Government-Related Conspiracy Theories on Covid-19." *Personality and Individual Differences*, vol. 168, 2021, p.1-7, <https://doi.org/10.1016/j.paid.2020.110289>.

²² Other examples: "Rambo El on Tiktok." *TikTok*, <https://vm.tiktok.com/ZM83hY1y3/>.

"Daisy Banuelos on Tiktok." *TikTok*, <https://vm.tiktok.com/ZM83r3waA/>.

You are encouraged to watch this two minute video, to better follow the discussion; (<https://vm.tiktok.com/ZM83hMr7j/>).

A male adult has posted this video, where he talks about a Nano chip that is being injected into our blood stream through the COVID vaccine. He argues that, this Nano chip injected, has personalized identification numbers for whoever gets the vaccine. Then in cases such as terrorist attacks, the government can swipe through a tablet, which presents our body, and swipe up from the legs to the neck, causing the Nano bites in our blood stream to take over and paralyze us. Upon research this is one of the most extreme conspiracy theories to have been discovered on TikTok. It generates fear amongst any viewer. In this case, it does not only influence younger audience but even older, because sometimes despite logic fear leads to irrational thoughts and decisions. As mentioned earlier, because COVID 19 brought a new way of life and new rules, it threatened and scared many. A study showed that up to 80% of people use social media platforms such as Instagram and TikTok, regarding vaccine updates.²³ This provided the conspiracy theories with an alarmingly big audience. The vaccine is one of the ways to battle the spread and fatality of COVID. Listening to such conspiracy theories rather than trusting that

²³ Mitchell, Amy, and Jacob Liedke. "About Four-in-Ten Americans Say Social Media Is an Important Way of Following Covid-19 Vaccine News." *Pew Research Center*, Pew Research Center, 24 Aug. 2021, <https://www.pewresearch.org/fact-tank/2021/08/24/about-four-in-ten-americans-say-social-media-is-an-important-way-of-following-covid-19-vaccine-news/>.

we have to get this vaccine, causes a polarization within society; the vaccinated and the unvaccinated. It has created two realities, as the vaccinated can go out for dinner or enter closed spaces, whereas unvaccinated people cannot. When health authorities, upon research they have conducted, guide us to get the vaccine for various reasons, as citizens we are inclined to do so. We should trust that this is for our benefit because what else can we do as citizens in regard to COVID.

4. Conclusion

To conclude, conspiracy theories posted on social platforms like TikTok, negatively shaped peoples trust and attitude towards scientist and research. At the same time, by not trusting the guidelines provided by health authorities, it led to dangerous behaviors that significantly impacted society and individuals. The behavioral consequences that false information can create is highly evident during this pandemic. By believing that COVID does not exist, preventive measurements were not followed through. Subsequently, it encouraged people to roam the streets without wearing face masks or maintain social distance rules, which in turn aided the increase of COVID cases worldwide. When young adolescence takes this example by adults, they then act accordingly. People injecting chlorine/bleach because a TikTok told them to, potentially harmed the safety of individuals. Moreover, by not taking the vaccine, we sustain the reality we live in right now because we do not help fight off COVID.

Platforms such as TikTok, which has Generation Z as its main audience, should police information because younger audience are more vulnerable to conspiracy theories. The past 2 years, during COVID, health authorities have played a key role, in battling COVID. Scientist were able to find measures that can help us avoid being infected. They were able in a short amount of time to find a vaccine, that reduces transmissibility and substantially decreases effects when in contact with the virus. It is of high importance to not let conspiracy theories manipulate its audience, in not trusting health authorities.

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Novel Coronavirus(2019-NCov) - Who. <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200202-sitrep-13-ncov-v3.pdf>.

Oleksy, Tomasz, et al. "Content Matters. Different Predictors and Social Consequences of General and Government-Related Conspiracy Theories on Covid-19." *Personality and Individual Differences*, vol. 168, 2021, p. 1-7., <https://doi.org/10.1016/j.paid.2020.110289>.

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