How does the information individuals digest on social media amidst a pandemic correlate to interactions with COVID-19 and society?

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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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As most of society has experienced, social media is a resource for information. People have resources that they trust every single opinion broadcasted and others they deem invalid or "fake news". With the emergence of the pandemic, all social media platforms were releasing COVID-19 information, some holding validity and others later debunked, but most importantly what information do individuals digest and where do they put their trust? With a range of statements being made, the information people absorb on social media affects their emotions and behaviors towards the virus. However, individuals using social media are not digesting the vast opinions, ideas, and contradicting information due to personalization. Furthermore, with new information constantly being released, the way society interacts with the virus can change frequently. These interactions, influenced by our behaviors and emotions creates a sense of shame, distrust, and fear. COVID-19 has created a sense of shame for those positive with the virus or who do not participate in the virus precautions, distrust in others in society and those of authority, in particular scientist and politician elites, and fear of contracting the virus and the wellbeing of their future. It is crucial to analyze the way people digest information and what they are digesting as it can give insight to the fear, shame, and distrust within society and the misinformation and distrust between those of authority and the public. The main topics of exploration are social media digestion, the effects of digestion and placement of trust on emotions and behaviors, the negative emotional outcomes, and combatting distrust and misinformation.

Social Media Digestion

The phenomenon of social media has grown with the rise of modern technology as society now has access to many different platforms, resources, and ideas. During the pandemic, social media was used as a source of information about COVID-19. It has been referred to as the first ever social media "infodemic", which encapsulates the uncontrollable spread of all information, including low-credibility, unverified, fake, or true information (Ferrara, Cresci, & Luceri, 2020). In the pandemic, many countries were unable to spread valid and true COVID-19 information, which led society to digest information on social media.

A study by Depoux and others (2020) have determined the three roles of social media during the pandemic: 1. Facts about the outbreak were shared on social media, 2. Misinformation, fake news, and inaccurate information were published on social media, and 3. Social media produced fear and panic.

Personalization

The issue with social media is that it is not the same for all. Social media platforms have evolved to contain individual personalization and provides varying types of content. It personalizes what a person sees based on their interactions with the app, age, gender, level of education, and various other factors. Furthermore, these algorithms provide content to the user based on their personality, beliefs, and interests. It pulls these factors from an individual's profile, posts they comment on, like, and share, and more (Sahni & Sharma, 2020). Every single one of the user's action is meticulously monitored and recorded. According to a study by Ahmad and Murad (2020), no matter the factor, the majority of individuals heard, saw, and read news about COVID-19 the most. However, due to this personalization, the ideas and opinions about the virus differed. This personalization has created "bubble filters", a concept formulated by Eli

Pariser (2020). This filter creates a "personalized ecosystem" for each individual, where the user is only shown content that is similar to what they already are interested in and favor based on the data collected by social media algorithms. However, if a user is only shown information and ideas they already believe in, they are unable to digest contradicting information and ideas (González-Padilla & Tortolero-Blanco, 2020). Over time, a user in this "personalized ecosystem" has a false sense of support from others on social media. Since everyone on their feed has the same ideas and opinions as them, they believe that everyone agrees with them. When a person sees a similar opinion or an idea enough times, they begin to see it as true and now with personalization everyone believes in a different set of facts. However, on a global level, if everyone has a different set of facts, they are no longer able to digest and believe information that contradicts the verified set of facts they have created. The algorithm used by social media has been advanced enough to the point that users are digesting fake news as if it were true, and slowly over time users believe the lies fed to them by social media. In the pandemic, society has no idea what is true or false, but now it is a matter of life and death (Orlowski, 2020). The inability to detect false and true information increases panic and rumors about the reality of the pandemic, continuing and growing the spread of misinformation.

Negative and Positive Effects

Social media platforms come with the advantage of quickly spreading information and the major disadvantage of alarmist, erroneous, and exaggerated information. The main issue is, although technological resources contain valid and invalid statements, most commonly those being spread and seen are false. According to an MIT study, fake news on Twitter spreads six times faster than true news. A study by González-Padilla & Tortolero-Blanco (2020) found that less than a third of the COVID-19 related videos on Youtube referenced prevention measures,

less than half referenced common symptoms, but, almost 90% focused on deaths, anxiety, and quarantine status. The information shared on social media does not prioritize prevention of and symptoms of COVID-19, it focuses on what will provoke the most emotion and engagement, which is not beneficial in educating society. With social media's business model monetizing on engagement, users are not the customers; they are the ones being taken advantage of. Social media takes advantage of the medical and scientific illiteracy of society and feeds them content with the main goal of monetization. This creates a bias towards intriguing information, which is commonly false (Orlowski, 2020). Since users are intrigued by shocking, "clickbait" information on social media, print advertising, legacy newspapers, and magazines add to the spread of misinformation. The articles written by these actors and shown on users' social media feeds are quickly released without sufficient evidence and resources to confirm or support the claims made creating a lack of separation between opinion and news (Phillips, 2020). These articles combined with posts published by other user on social media platforms, gives the daunting and difficult challenge of deeming information credible and valid to the user (Barua, Barua, Aktar, Kabir, & Li, 2020).

The digestion of personalized information, has created a polarization amongst individuals. Users have thoughts, opinions, and ideas they did not originally have due to social media. Based on a study by Ferrera, Cresci, and Luceri (2020), this polarization might affect the practice of COVID-19 precautions and can ultimately have negative consequences for public health. Misinformation can turn into emotions and behaviors with critical negative health effects.

Effects of Digestion and Trust on Emotions and Behaviors

What individuals are digesting on these social media platforms and where they put their trust creates certain emotions and behaviors.

Effects of Trust on Emotions and Behaviors

Where individuals put their trust creates certain emotions and behaviors. With the uncertainty of information rapidly spreading and the context of data collection, COVID-19 is hard to universally understand. Society has no idea what is true and valid, but with COVID-19, it may be a matter of life and death. This raised anxiety and explosion of information leads individuals to find certainty and validity from a mixture of information sources, commonly non-medical resources (MacGregor, 2020). With the spread of misinformation online, it only adds to the negative view of Science elites and Big Pharma. Big Pharma is known for being corrupt and unethical, however, as social media is biased and personalized individuals may not see how their alternative medicine is working in the same way. They both take advantage of the lack of medical and scientific knowledge to sell their product that has not been thoroughly tested; alternative medicine is not any less profit driven than Big Pharma (Phillips, 2020). As previously stated, social media is business built on the monetization of engagement and will deliver any information to keep the user on their phone. The algorithms social media runs on are not built with public protection in mind, allowing the spread of any information on social media.

Effects of Digesting Misinformation on Emotions and Behaviors

No matter the validity, society is absorbing the information they see on social media and it is producing various interactions with the virus. The surplus of information spread on social media caused global panic. However, digesting misinformation has greater negative consequences, as it creates confusion and spreads fear, slowing down the outbreak response. Moreover, an individual absorbing inaccurate or inappropriate content may not participate in COVID-19 precautions and guidelines. In a literature review study published by Li et al. (2020), it was discovered that the spread of misinformation can cause negative consequences such as

fear, anxiety, false implications about COVID-19, and tension between the patient and doctor dynamic (Sahni & Sharma, 2020). Another study by Ahmad and Murad (2020) found similar results, where they found a significant positive statistical correlation between self-reported social media use and the spread of COVID-19 panic. Based on the participants' answers, 26.6% said fake news, 17.4% said the spread of the number of individuals infected, and 7.6% said the number of COVID-19 deaths catalyzed panic on social media. As it is shown, fake news has a critical role in the spread of COVID-19 panic. Furthermore, they found the digestion of inaccurate information on social media had a negative effect on public health and mental health (Ahmad & Murad, 2020). These different emotions worsen the state of the pandemic.

Misinformation can also cause disastrous behaviors and worsen the state of the pandemic. For example, an individual died from consuming chloroquine after being misinformed about chloroquine curing COVID-19 on the news. In another example, an Imam of a mosque in Dhaka City led believers to think that COVID-19 would not affect them in the mosque because they were cleaning themselves. Due to spread of misinformation and non COVID-19 compliant actions, individuals in society may participate in life-threatening actions they saw on social media. Furthermore, the general misinformation surrounding COVID-19 can produce negative individual behaviors. Another study supported this claim and suggested that misinformation on social media causes mistrust in the public, which ultimately creates different emotions and behaviors towards COVID-19 (Barua, Barua, Aktar, Kabir, & Li, 2020).

Fear, Shame, and Distrust within Society

The wide range of emotions and behaviors surrounding COVID-19 created negative emotions in society. These negative emotions being fear, shame, and distrust.

These different interactions and the constant spread of pandemic updates causes fear, stress, and anxiety in society. In China, researchers found that 53.8% of respondents were moderately or severely impacted psychologically by the pandemic to the extent that the researchers even created a " Fear of Covid-19 scale" (González-Padilla & Tortolero-Blanco, 2020). Amidst the virus, people have grown shame in themselves for not following health guidelines and precautions, fear in the wellbeing of their future caused by the unknown virus, and distrust in others around them due to the different interactions with the virus. This fear and shame are seen with the lack of contact tracing. Individuals are reluctant to contract trace due to fear of losing their jobs, housing, and relationships. Another emotion fueling the lack of contract tracing is shame. These negative emotions combined with lack of trust in science and political elites, create a larger and more uncontrollable pandemic.

In the pandemic, scientists and government officials of authority have the responsibility of controlling the spread of COVID-19 and informing society. In a paper published by Rhodes et al. (2020), authors stated that the discussion around the virus has only included mathematical models and modeling experts and suggests the reduction of distance between experts and the public. The decrease in distance will improve their relationship as ‘people want to input, to make and translate [COVID-19] evidence, not merely receive [it]’ (Will, 2020). Moreover, the spread of misinformation on social media allows for the exploitation of government and scientific elites for financial and political gain of external actors. In an anti-vaccination article, Phillips (2020) describes how scientific experts position Science as a dominant form of knowledge. Those not part of scientific establishments feel disempowered as their reasonable arguments are dismissed, distrust inevitably results from this disenfranchisement. This distrust in authority and lack of medical and scientific literacy pushes society to find truth and certainty in information they

digest on social media. The distrust in authority, specifically in the government, can be seen with the lack of contact tracing. A general distrust of government has prevented individuals from sharing their contacts (Kingkade, 2020). Specifically, immigrants are hesitant to share information with contact tracers because they are fearful their information will be reported to federal authorities and be used negatively in future immigration hearings. The distrust and negative emotions created by social media hinder the actions of government to control COVID-19.

Proposed Solutions to Combatting Distrust and Misinformation

What have been proposed methods to combating distrust and misinformation in society? If we were able to understand the social interaction between content consumption and all social media and technological platforms, it may aid in designing more efficient and effective communication strategies in times of crisis (Cinelli et al., 2020). With one of the major issues being misinformation, delivering fast, accurate, and reliable information early on is a critical key in controlling the spread of COVID-19. Social media can be utilized to communicate with the public and share important information from reputable organizations, such as the World Health Organization (WHO) and the Center for Disease Control (CDC). A study found that in the outbreak of Ebola in 2014, social media enabled the CDC to quickly deliver information to the public and ultimately prevent the deterioration of public health. Additionally, through social media, the WHO was able to efficiently communicate globally the emergence of Zika in 2016. Furthermore, social media monitoring and prevention awareness messages were critical in risk control and disease management. With this in mind Sahni and Sharma (2020) suggest combatting misinformation through the use of social media, specifically fast expert advice, constant public health awareness, and a correction program. The correction program, coupled with the other

techniques, will be successful if the information is communicated clearly and quickly with evidence and resources included (Sahni & Sharma, 2020). A trusted opinion will be essential in aiding those who are uneducated about the virus and the individuals feeling fear, shame, and distrust.

The suggestion of utilizing social media is supported by previous successful situations. For example, in Vietnam, the Vietnamese Ministry of Health used social media to rapidly share information about COVID-19 to the public. A critical aspect in their solution was the relationship between social media experts and healthcare professionals. The information shared by the country was also communicated to the healthcare professionals, and the healthcare professionals closely communicated with the social media experts to prevent the spread of misinformation. The adaption of one resource, the Vietnamese Ministry of Health, supported by social media experts and healthcare professionals allowed for the public to digest a single set of facts about COVID-19. If the Vietnamese Ministry of Health, social media experts, and healthcare professionals are in alliance and in agreement to a single set of facts, it allows for a single clear verified source of information (Ahmad & Murad, 2020).

Following the idea of scientific and medical literacy campaigns through public health organizations, Europe has seen small improvements through these tactics. In Denmark and Ireland, public health organizations were able to combat declining human papilloma virus vaccination (HPV) thought smart campaigns educating the public about misinformation online. However, for these smart campaigns to be successful, it is critical for the campaign be fully funded or implemented.

Current Barriers in The United States

This critical aspect of fully funded or implemented smart campaigns has prevented the United States from effectively campaigning to the public. Furthermore, although the United States has future plans of scientific and medical literacy campaigns, it will not solve the lack of trust in scientific and political elites. It has been found that an increase in vaccination acceptance correlates to trust in healthcare professionals over non-medical resources, but there exists the barrier of distrust in elites. Specifically, in the United States, individuals are extremely divided and diverse on their opinions of the virus and how to act in this pandemic. The emergence of COVID-19 came into the United States at a time where the president, public health organizations, social media experts, and healthcare professionals did not have one clear and concise set of facts and resources for COVID-19, unlike Vietnam. The polarization of the United States increased by social media, and grew even more with the differing opinions of political and scientific elites. The varying opinions and constant contradiction between authoritative elites alone leaves the public even more confused about what COVID-19 information is true. These barriers reduce the efficiency of creating certainty through the spread of valid, clear, and concise information and increase negative outcomes within society.

Future Steps for the Next Pandemic

In the previous sections, it has been analyzed how the digestion of information on social media causes different emotions and behaviors, which in turn causes fear, shame, and distrust in society. The negative effects of social media amidst a pandemic have ranged from anxiety and stress to death in society. With the discussion of the proposed solutions and current barriers in mind, what should the United States do to reduce these negative effects in the next pandemic?

First to address the lack of funding with scientific and medical literacy campaigns throughout history, it is essential for science and political elites to intertwine and join forces for

future times of emergency. In particular, Phillips (2020) proposes as a solution that encompasses these barriers. The solution has many working parts and is not a singular simple solution. In addition to scientific and medical literacy campaigns, improved communication strategies by public health organizations, experts acting as advisors instead of rulers, and work towards inevitable bias to remove the distortion of science. With this solution and constant efforts, society could find an effective way to communicate to the public and be more efficient in future times of emergency (Phillips, 2020). Even with this all-encompassing solution and constant efforts, it is unknown the role and power of social media in society once the next pandemic arises. Moreover, if the working parts of Philips' solution will be enough to combat the distrust and misinformation caused by social media.

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