

Parallel Crises: The Underlying Science Infodemic Revealed by the COVID-19 Pandemic

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Abstract: This study examines the relationship between news consumption behaviors and credibility assessments during the COVID-19 pandemic. The researchers surveyed and interviewed participants and found evidence that political ideology and demographics significantly relate to news-seeking practices, trust in sources, and knowledge about the virus. Participants struggled to articulate coherent fact-checking strategies. The conflation of news and information resulted in widespread distrust. This study underscores the need for comprehensive news literacy education to generate critical thinking toward and informed engagement with news sources in a public health crisis.

Keywords: COVID-19 pandemic, news consumption, media literacy, social media, misinformation, infodemic.

INTRODUCTION

If all news sources are biased and “they’re all liars” (as one of our interviewees quipped), how does one determine what’s true? This conundrum underpins the complex relationship between news consumers and their evaluation of credibility. Further, the COVID-19 pandemic contributed uniquely to an ongoing shift in news consumption habits. No longer can assumptions be made that the general public understands what is news, nor that it is able to identify a news source, even where traditional news outlets are concerned. Low levels of news literacy are often tied to low levels of trust in news organizations. Rather than seeking out news directly from the established news organizations, many participants in our study claim they rely on their social media feeds. Given this shift in news-seeking behaviors, of particular interest is the process by which news consumers evaluate the credibility of non-traditional news sources or news shared through social media platforms in an often politically divisive news environment. Studies by (Singh *et al.*, 2020; Calvillo *et al.*, 2020; Gerosa *et al.*, 2021; Candel 2020) have evaluated the impacts and reach of fake news and misinformation during the pandemic; however, these perspectives have not adequately addressed how social media users evaluate the credibility of news sources during the pandemic. This exploratory research study seeks to fill that gap.

Through the analysis of news consumption behaviors during the pandemic (how people select and access different news sources; what they do to assess the credibility of the news sources; if and how their

choices vary based on age, gender, racial and ethnic background, educational attainment, political orientation, income, and amount of time spent accessing the internet and social media), this study investigates the diverse factors by which the behavior of news consumers is shaped in times of emergency. The diffusion of misinformation about the COVID-19 pandemic on social media is another significant area of investigation. Analysis of how respondents identified a news source - and the process by which they determined its credibility - suggest that the majority of respondents had little to no knowledge of how to properly do so, leading to an overall distrust in all sources. This lack of basic working knowledge of news information suggests a broader concern: that the evaluation of news consumption habits is inherently disrupted by low levels of news literacy, driven by media convergence and the proliferation of content shared via social media. This reveals quite clearly an ugly side of social media and news literacy. For scholars, this creates a two-fold investigation: 1. The demographic makeup of news consumers must be understood to better evaluate how personal belief impacts news consumption habits, and 2. An evaluation of news literacy levels is required to determine if consumers are making informed/uninformed or rational/irrational decisions. This study is significant because it combines these two investigations. By closely examining people’s news consumption and strategies for assessing credibility, this study sheds new light on the roles social media and changing media literacy play in the overall decline of trust in news and shifting information-seeking practices.

LITERATURE REVIEW

The proliferation of digital news media and social media has had a profound effect on news-seeking and

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news consumption behaviors, impacting how people access and interpret news, and if and how they assess the credibility of sources. This literature review highlights some of the key findings from recent studies about news consumption, news-seeking, news discernment, news-sharing, news information overload, and consumption of misinformation on social media and cognitive bias, with relevance to the study of news consumption during the COVID-19 pandemic.

News Consumption

In the past decade, news consumption behaviors among adult Americans have undergone significant changes due to the migration of the majority of news media sources to digital media platforms. National surveys conducted by The Pew Research Center (PRC) in recent years reveal that the majority of U.S. adults access news on digital devices. For example, in 2020, 86% of the PRC survey participants said they access news on a digital device (smartphone, tablet, computer) “often” or “sometimes,” while 60% answered they do so “often” (Shearer, 2021).

The PRC has tracked Americans’ news consumption on social media since 2013; not surprisingly, the percentage of people who get their news on social media has been increasing gradually across multiple platforms. As of 2020, “approximately 71% of adults in the USA get at least some of their news (a term which the study didn’t define for respondents) from social media platforms, with 23% reporting they do so “often.” [...] “59% of Twitter users, 54% of Facebook users, and 42% of Reddit users stated that they ‘regularly’ get their news from their respective social media platform rather than simply ‘sometimes’” (Straub *et al.*, 2022). According to the survey data published by the PRC in 2023, half of U.S. adults reported accessing news from social media at least “sometimes,” while 30% of those surveyed reported they “regularly” access news on Facebook, 26% on YouTube, 16% on Instagram, 14% on TikTok, 12% on X, 8% on Reddit, 5% on LinkedIn, 4% on Snapchat, 3% on WhatsApp, and 1% on Twitch (Liedke & Wang, 2023).

Based on the survey data collected in January/February and April 2020, the Reuters Institute Digital News Report 2020 concluded that “The coronavirus crisis has substantially increased news consumption for mainstream media in all six countries where we conducted surveys before and after the pandemic had taken effect. Television news and online

sources have seen significant upticks, and more people identify television as their main source of news, providing temporary respite from a picture of steady decline. Consumption of printed newspapers has fallen as lockdowns undermine physical distribution, almost certainly accelerating the shift to an all-digital future” (Newman *et al.*, 2020).

Motivated News-Seeking

Research on information exposure has previously supported the belief that political information exposure is both sought after and incidental (Weeks *et al.*, 2017). Upon encountering information that contradicts or challenges an existing belief system, individuals with staunch political affiliations have been shown to engage in motivated information seeking to potentially confirm or reaffirm existing beliefs (Weeks *et al.*, 2017). Within the context of the COVID-19 pandemic, information-seeking behavior of this nature may drive the perpetuation of misinformation about the virus on social media. Individuals who encounter news stories that do not challenge their political perspective, may be more likely to return to those sources of information regardless of veracity. When social media users discover accounts on social media they perceive as trustworthy, it is likely that they will continue to return to those sources of information (Lee *et al.*, 2017). This could lead to news avoidance as a strategy for dealing with information overload.

News Information Overload

Constant access to news through legacy media and social media channels can lead to news information overload. During the COVID-19 pandemic, Ahmed (2020) found that while some news consumers engaged in media refusal, avoidance, or selective consumption to avoid feeling overwhelmed, others increased their news consumption, with most extreme cases risking cyberchondria, a condition characterized by excessive online health information searching leading to increased anxiety. Coping with information overload depends on various factors such as news consumption disposition, motivation, pre-COVID-19 media habits, media and digital literacy, self-efficacy, demographics, and personal factors (Ahmed, 2020). To manage the distress caused by information overload, individuals may change their information gathering practices or avoid news altogether (Ahmed, 2020; Lee *et al.*, 2017), potentially turning to low-information, high-entertainment value social platforms. Platform preferences may affect understanding of politicized

issues like the severity of COVID-19, virus susceptibility, and preventative measures (Geers, 2020).

News-Sharing

Prior to the pandemic, studies concluded that people are motivated to share stories that activate a strong emotional response and do so consciously as active participants in the dissemination of important information (Capella *et al.*, 2015; Kim, 2015; Magarey & Trexler, 2020). Kim (2015) found that emotionally resonant health articles from *The New York Times* were shared more via email and social media. As more people access news through social media, emotionally provocative news spreads further, influencing the stories produced by news organizations (Bright, 2016; Capella *et al.*, 2015; Kim, 2015). Social media may also influence perceptions of news organizations as journalists build social media personas and interact more directly with readers (Lee, 2017).

However, emotional response alone does not explain news spread on social media. Factors such as defense, avoidance, impression management, efficacy, and novelty also motivate sharing (Capella *et al.*, 2015). During a crisis, efficacy and novelty may contribute to the spread of relevant news and information. Bright (2016) concluded that topics generating different sharing outcomes are tempered by perceived importance and social status elevation. Topics elevating one's standing within an online community are shared more; less engaging stories spread less. Consequently, journalists and news organizations are motivated to produce more shareable stories. Bright (2016) suggests platform differences in topic popularity for sharing, possibly due to audience differences, could amplify some topics and marginalize others, affecting exposure to information and misinformation about COVID-19.

News Discernment

Medium preference for news access and perceptions of news information overload affects how news consumers perceive traditional journalistic norms (Lee *et al.*, 2017). News consumers who preferred speed over accuracy did not report experiencing news information overload, whereas those who favored slow reporting and journalistic norms felt overwhelmed by news on social media (Lee *et al.*, 2017). This presents problems for detecting "fake news" and misinformation on social media when people encounter stories about

the novel coronavirus, since the type of news consumed by an individual can predict news literacy (McWhorter, 2019). If an individual is partial to slower, potentially more accurate reporting, it is possible that their ability to evaluate information is higher than someone who places less value on accurate reporting (e.g., Kim, *et al.*, 2021). As both groups engage in news sharing via social media, they influence the understanding and perception of social issues within their own networks. With respect to the novel coronavirus pandemic, the role each individual plays in understanding the virus and its effect on a community is paramount.

While sharing and reposting news stories has been associated with news media literacy (McWhorter, 2019), this may not account for how different groups of people define news. Similarly, being able to evaluate news stories for authority and credibility may also depend on an individual's definition of news, particularly as news organizations have been labeled politically biased by partisans on opposing ends of the spectrum. In addition to media literacy knowledge and skills, mindfulness and analytic thinking predict an individual's ability to discern fact from fiction (Calvillo *et al.*, 2020; Pennycook & Rand, 2019). Pennycook and Rand (2019) found that regardless of political ideology, more analytical individuals were better at differentiating between misinformation and real news stories.

Misinformation

A great deal of misinformation about COVID-19 spread throughout the pandemic. Research suggests that misinformation spreads faster and further than real news (Vosoughi *et al.*, 2018), and its spread may be exacerbated by a lack of knowledge about traditional journalistic norms and by news avoidance tactics (Craft *et al.*, 2017; Lee *et al.*, 2017). The lack of knowledge about how news media work contributes to belief in conspiracy theories (Craft *et al.*, 2017). As rampant misinformation and conspiracy theories about COVID-19 circulated online, it is likely that many individuals were as susceptible to falsehoods as they were to the virus itself.

In the early months of the pandemic in the U.S., a strong correlation between conservative leaning media consumption and misinformation endorsement was established (Calvillo *et al.*, 2020; Motta *et al.*, 2020). More partisan news consumption predicted participants' perceptions of their own vulnerability to and the severity of COVID-19, with more partisan

sources linked to higher rates of disbelief of the virus severity and the belief that the news media are exaggerating (Calvillo *et al.*, 2020). The findings demonstrate the relationship between overall consumption of right-leaning content, which was “more likely to make inaccurate claims about the origins and treatment of COVID-19” and misinformation endorsement (Motta *et al.*, 2020, p. 340). Conservatism was associated with less accuracy for evaluating news headlines as real or fabricated, making conservatives more vulnerable to misinformation about the pandemic (Calvillo *et al.*, 2020; Pennycook & Rand, 2019). Political leadership and media framing of a threat, such as COVID-19, shapes the way the threat is perceived should it become politicized (Calvillo *et al.*, 2020). These findings suggest that, while some news outlets disseminate misinformation about the virus, the disinclination to use analytical thinking when confronted with misinformation will complicate attempts to educate.

Consumption of Misinformation About COVID-19 on Social Media

Research on the toxic role of social media in spreading misinformation is substantial (Tandoc, Lim, & Ling, 2018; de Zúñiga & Chen, 2019, among others). Misinformation about COVID-19 had been diffused and consumed by social media users from the early days of the pandemic. Textual, visual and audio/visual content trending on social media included misinformation about the original source of the COVID-19 infection, the efficacy of personal protective equipment, home-made remedies, vaccines and antiviral medications, among others. According to Kim *et al.* (2021), news consumption on social media is not limited to the delivery of messages from creators to consumers, given the capacity of social media to blur the boundaries between content creators and consumers. The types of interactions among social media users on a given platform affects what type of information one is consuming and how. “Due to the characteristics of the Internet and social media, people are accustomed to consuming information quickly, such as reading only news headlines and checking photos in news articles. This type of news consumption practice could lead people to consider news information mostly based on their beliefs or values. This practice can make it easier for people to fall into an echo chamber and further social confusion”(Kim *et al.*, p. 12).

Kim *et al.* (2021) identified two factors that affect fake news consumption: cognitive biases and personal

traits. “Cognitive bias is an observer effect that is broadly recognized in cognitive science and includes basic statistical and memory errors. However, this bias may vary depending on what factors are most important to affect individual judgments and choices. We identified five cognitive biases that affect fake news consumption: confirmation bias, in-group bias, choice-supportive bias, cognitive dissonance, and primacy effect” (Kim *et al.*, p. 13).

Research Questions

RQ1: From what sources are people getting their news and information during the COVID-19 global health pandemic?

RQ2: How do people assess the credibility of a source, especially when accessing news about COVID-19 via social media?

MATERIALS AND METHODS

Between October and December 2020, three hundred and twelve research participants completed a survey, and between February and May 2021, ninety-seven participants were interviewed. This study’s small sample size, while not representative, provides opportunity for further exploration into a significant area of research. The depth of data collected through surveys and qualitative interviews provides a layered and nuanced look at news consumption habits beyond rudimentary terms of source, access, and frequencies. Researchers additionally sought detailed information on fact-checking processes and included a news literacy quiz to better contextualize participant responses. We used SPSS to analyze the quantitative data and Tableau and Google Sheets to create visualizations. Dedoose was used for qualitative analysis.

RESULTS

Knowledge Quiz

In our quantitative survey, we included a knowledge quiz about COVID-19 as a way of assessing how well participants understood the virus. The quiz data might also be used to help better understand which information seeking strategies are most likely to lead participants toward reliable and credible sources providing accurate information about the pandemic. In analyzing the results of this quiz, political ideology demonstrated the strongest correlation with one’s answers to all of the questions on the quiz, with

Table 1: Demographics for Qualitative Interviews (N=98) and Quantitative Survey (N=312)

Demographic Category	Qualitative	Quantitative
Gender		
Woman	55.1%	62.7%
Man	42.9%	33.4%
Non-binary	2.0%	1.4%
Age		
18-24	27.6%	28.6%
25-34	26.5%	19.5%
35-44	18.4%	18.8%
45-54	10.2%	17.1%
55-64	5.1%	11.8%
65+	12.2%	4.2%
Ethnicity		
White	78.4%	87.1%
Black or African American	13.4%	2.8%
Native Hawaiian or other Pacific Islander	2.1%	0.3%
Asian	1%	2.1%
Hispanic or Latinx	1%	2.1%
Other	4%	5.6%
Educational Attainment		
Some High School (did not graduate)	3.1%	0.3%
High School Diploma	12.4%	10.8%
Some College (1-3 years)	20.6%	18.8%
Associates Degree/Technical Degree	7.2%	5.6%
College Graduate (Bachelors)	21.6%	24.7%
Some postgraduate (no advanced degree)	10.3%	11.1%

(Table 1). Continue.

Demographic Category	Qualitative	Quantitative
Master's Degree	18.6%	20.6%
Doctorate Degree	5.2%	5.6%
Political Ideology		
Democrat	45.7%	35.5%
Independent (but I feel closer to a Democrat)	12.0%	28%
Republican	9.8%	8.4%
Independent (but I feel closer to a Republican)	3.3%	6.6%
Independent	22.8%	15%
Other	6.5%	6.5%

Table 2: COVID-19 Knowledge Quiz Questions and the Average Political Ideology of Respondents Answering True and False

Question	Average Political Ideology for True Answer	Average Political Ideology for False Answer	χ^2	P value	Cramér's phi
If you are young and relatively healthy you cannot die from COVID-19	4.333	7.177	(9, N=216) = 31.657	p < 0.001	.383
Cloth masks are not effective in preventing the spread of COVID-19	5.077	7.319	(9, N=217) = 33.991	p < 0.001	.396
COVID-19 will eventually disappear	6.130	7.150	(9, N=216) = 37.438	p = 0.001	.356
The United States has one of the lowest mortality rates for COVID-19 in the world	4.438	7.253	(9, N=215) = 33.494	p < 0.001	.395
Almost all of COVID-19 cases are harmless	5.697	7.288	(9, N=217) = 20.063	p < 0.05	.304
Studies show that hydroxy chloroquine is safe and can protect against COVID-19	5.370	7.284	(9, N=216) = 27.848	p = 0.001	.359

Cramér's phi showing a moderate effect of political ideology on the answers.

Participants ranked their overall political ideology on a spectrum, with "1" being very conservative and "10

being very liberal. The overall average political ideology of all respondents was: 6.868. The results demonstrate that those leaning more liberal were more likely to understand the COVID-19 virus than those leaning more conservative. In light of this, it may be important

to analyze the differences in information seeking practices and strategies for assessing credibility between these two groups.

There is a statistically significant connection between the first place a participant goes to seek information when an event of national importance occurs and how they answered whether hydroxychloroquine is safe and can protect against COVID-19 ($\chi^2(27, N=216) = 42.761, p < 0.05$. Cramér's $\phi = 0.445$). Participants who answered false to whether hydroxychloroquine was safe were more likely to seek their news first from broadcast news (standardized residual of 2.7), Twitter (standardized residual of 2), and online newspapers (standardized residual of 2.3). Participants who answered true were more likely to seek their news first from cable television (standardized residual of 2.2). There was additionally a statistically significant connection between the first place a participant goes to seek information when an event of national importance occurs and how they answered whether the U.S. has the lowest mortality rate in the world ($\chi^2(27, N=215) = 41.085, p < 0.05$. Cramér's $\phi = 0.437$). Participants who answered false were more likely to seek their news first from broadcast television (standardized residual of 2.7) and online newspapers (standardized residual of 2.5). Participants who answered true were more likely to seek their news from cable television (standardized residual of 4.0).

Sources of Information (RQ1)

In assessing the sources that participants were using to access news and information about the pandemic, we sought to understand not just the particular outlets or platforms, but also how those sources were being accessed, the motivations for selecting those sources, and how these strategies varied based on demographics. Quantitative survey participants overall spent more time using social media than consuming news, with the majority of participants consuming news for less than an hour per day, and a smaller but similar amount devoting 1-2 hours per day to their news consumption, as seen in Figure 1. Most spend 1-2 hours per day on social media, with another large group spending 3-4 hours per day.

The use of print newspapers as a source of information was very low, with the majority of participants not having used one in the past week. When asked where they would first seek news when an issue of national importance occurs, there were three clear leading sources: broadcast television, online

newspapers, and cable television, in that order (Figure 2). This is of note, as these three sources were also most closely statistically linked with how well participants performed on the knowledge quiz.

We also asked participants to share how much time they spent with various sources of news media, as well as on social media sites. Out of news sources that were viewed multiple times a day, cable television was the leader, with radio and news aggregators trailing slightly behind (Figure 3). Online newspapers and news aggregators were the most used a few times per day, with broadcast television following closely. For social media, Facebook, Instagram, and YouTube were the platforms used most often for multiple hours per day. Facebook, followed distantly by Instagram, was the clear leader in being used a few times a day. Facebook and Instagram stood out overall as the most frequently used social media platforms by participants.

One major finding in the qualitative results was that all participants under 40 were actively avoiding news about COVID-19. One explanation for this is that some participants expressed a decreased interest in news consumption since the onset of the pandemic due to an overwhelming focus on COVID-19 – they were expressly feeling tired of hearing about the same issue for so long. One participant noted, “I tend to listen to music in my car because I intentionally try to avoid stressful things like news when I’m in my car.” Interest in vaccines also stood out significantly in our data. Data collection occurred during the time that the vaccine was first released. Many participants interviewed after this release noted that this event in particular caused them to stop following the news about the pandemic, or focus only on vaccine related news: “I was, in the early stages of COVID-19, looking daily for information, anything you could really find about it. At this point, it’s been about a year, so I’ve kind of relaxed and not really been focusing on much news other than the vaccine updates.”

In older demographics, those with higher education attainment and those earning over \$100,000 annually were more likely to actively seek out information. Political leaning also played a role, as Republicans were more likely to actively avoid COVID-19 news, while Democrats and those leaning toward Democrats were more actively seeking out this news.

When looking at particular sources of news, the majority of respondents used local news for COVID-19

How much time do you spend on each in an average day?

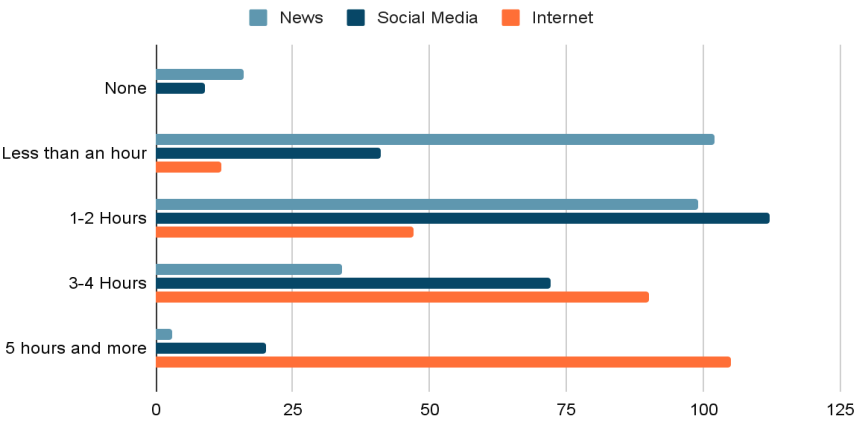


Figure 1: How much time do you spend engaging each on an average day?

First Source of News

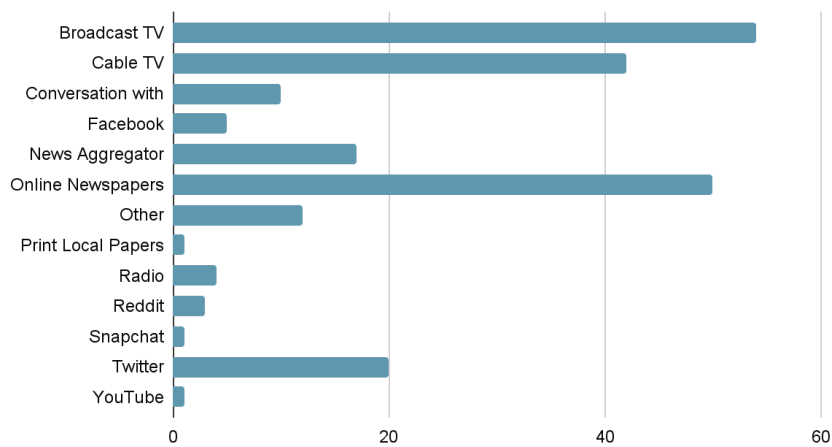


Figure 2: When an event or issue of national importance occurs, where is the first place you go to find more information?

Time Spent on Media

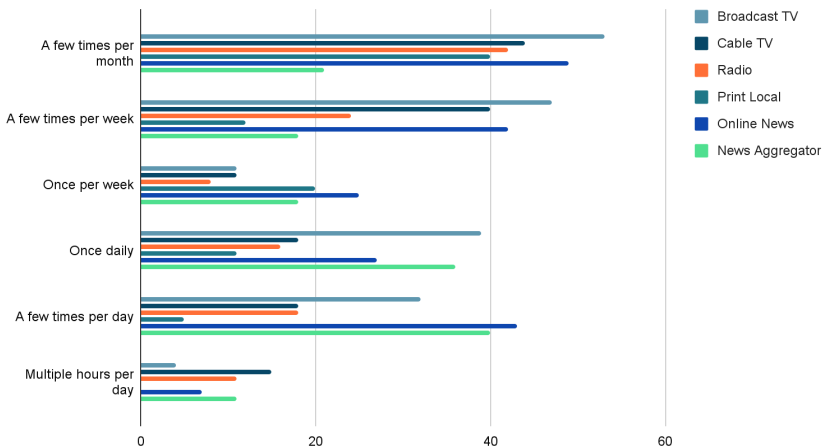


Figure 3: How much time do you spend on each news source?

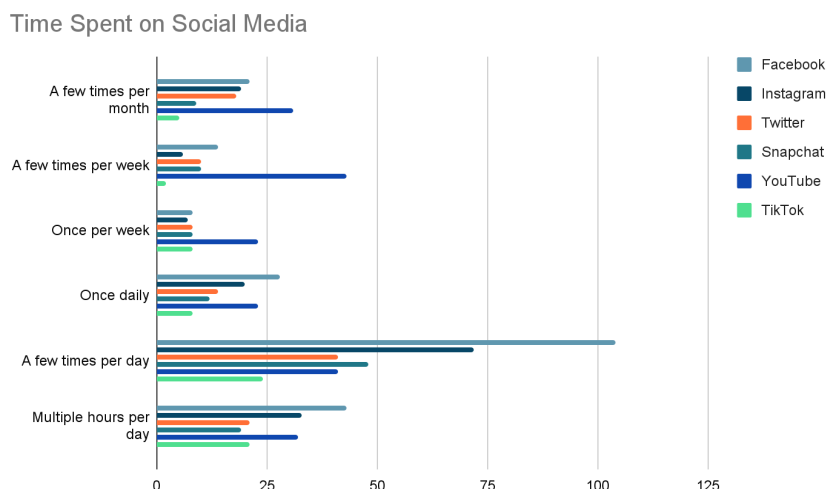


Figure 4: How much time do you spend on each social media site?

updates, with the Center for Disease Control (CDC) and CNN being other popular choices. Convenience was a key factor for most respondents in choosing their information source. No Republicans or Republican-leaning respondents identified the importance of being informed as a motivating factor. Most who identified "seeking multiple sides of an issue" were Independent with a Republican-leaning signifier. In other words, those who identified most strongly on either end of the political spectrum did not find it important to seek multiple sides of an issue. The most frequented sources included television news, especially CNN and broadcast stations, followed by the CDC, national news outlets, such as *The New York Times* and *The Washington Post*, and then radio, with NPR being the most popular. Social media platforms and word-of-mouth information from friends or relatives also contributed to news dissemination, albeit to a lesser extent.

The interview data indicated that respondents over 60 were more likely to check the news multiple times a day. All respondents who checked the news multiple times a day identified as Democrats or Democrat-leaning Independents. Younger respondents under 30, as well as those with lower educational levels, were less likely to check the news frequently. Age and political ideology also appeared to influence news source preferences. Older participants showed a preference for television news, while younger participants showed a higher inclination toward social media platforms. There were also political trends, with CNN having a higher Democratic viewership and Fox News attracting more Republicans.

We asked participants if they remembered what motivated them to seek a news source when intentionally doing so. Their responses provided insight into the influence of political affiliation, age-related trends, family influence, and convenience of access. Political affiliation and the motivation for seeking news revealed distinct patterns. For respondents identifying as Republican or Republican-leaning, being informed was not cited as a motivating factor. However, this contrasts sharply with the large proportion of respondents identifying as Independent with a Republican-leaning ideology (74.4%) who sought news to understand multiple sides of an issue. This data could indicate a broader skepticism or disinterest in mainstream news sources due to perceived biases or mistrust. This aligns with existing research on the impact of political polarization on media trust and consumption habits (Lee *et al.*, 2017).

The motivation for seeking less biased sources showed an even split between respondents identifying as Independent or Republican. This group consisted of 51% Republicans and 49% Independents, either with a Democrat-leaning or without a specific leaning. At the same time, no one who identified solely as a Democrat was represented in this category. The even split suggests a shared concern about news media across these groups. The data indicates that while some respondents were not motivated to seek news to be informed, they were motivated to seek news that they perceived as less biased. This could reflect a broader distrust in mainstream news, perceived by some as biased, and a desire to find credible alternative narratives.

Family influence on news source choice was most prevalent among individuals aged 51 to 61. One respondent said, "What I tend to do is I get the news from CNN because the majority of who's in the house likes to watch. But then, if I'm on my own, I like to watch local news because then I can have Boston summation (sic) about what's going on in the Boston area." Trust as a motivating factor was found across a range of ages, with the 51 to 61-year-olds being the most significant group. The data on family influence on news choices could provide valuable insights into how news loyalties are formed and maintained within family settings.

A noteworthy relationship was observed between convenience as a motivation for news consumption and high social media usage. Nearly 60% of those who favored convenience spent over five hours on social media. The reliance on social media for convenient news consumption raises questions about the quality of information and the potential for bias. Social media algorithms often prioritize content engagement over accuracy (Guess *et al.*, 2023), which may perpetuate misinformation or highly partisan content. This trend underscores the need for critical media literacy among news consumers and poses challenges for public health communication, particularly in disseminating accurate information during a health crisis.

There was a notable pattern among older individuals between the ages of 73 and 94, whose news consumption was motivated by seeking vaccine information. Older adults are often at a higher risk for severe illness from COVID-19, making vaccine-related news particularly relevant and critical for their health and well-being. This trend suggests that older individuals were actively seeking information that directly impacted their health decisions, such as vaccine availability, efficacy, safety, and administration processes. It indicates a reliance on news media as a source of potentially life-saving information.

We also asked participants how often and why they frequented a specific news source. Responses to this question revealed a range of behaviors differentiated mainly by age. Respondents aged 18-29 were notably underrepresented in the group that checked the news multiple times daily, making up only 1.9% of this demographic. The majority of frequent news checkers were much older, making up a combined 67.3% of which 26.9% ranged from 62 to 72 years in age and 40.4% ranged from 84 to 94 years in age. This trend suggests a higher engagement with news media

among older populations. The low representation of the 18-29 age group among frequent news checkers indicates a possible disengagement or lack of interest in regular news updates among younger adults. This could be attributed to various factors, including a preference for alternative sources of information, a perception that news is less relevant to their daily lives, or a general sense of news fatigue. One respondent said, "...I prefer not to overwhelm myself with a pandemic and with the information about the deaths, and the depth, and the toll, and the infection rates because I know it's out there. I know it exists. I know it's here to stay. So I don't want to overwhelm myself with the negative images and information. I'm trying to cope and live with the new norm at peace."

The disparity in news checking frequency between younger and older age groups may also reflect underlying issues related to the digital divide. While younger individuals may passively access news through digital and social media platforms, older individuals might rely more on traditional news sources like television and newspapers, which could contribute to their higher frequency of active news checking, as those sources are not updated as often due to technological and medium limitations.

Political affiliation played a role in the frequency of news checking. All respondents who reported checking the news multiple times daily identified as Democrats (47.8%) or as Independents leaning toward Democrat (52.2%). This indicates a strong correlation between political leaning and the frequency of news consumption. The correlation between political leaning toward Democrat and higher news-checking frequency may reflect underlying perceptions of media trust and bias. Individuals who lean toward or identify as Democrats might find mainstream news sources more credible or aligned with their views, encouraging more frequent engagement.

When examining the frequency of checking news once a week, the majority of respondents identified as Democrats (51.8%). The distribution for checking the news a few times a week, where the majority comprised Republican identifying (26%) or Independent but Republican-leaning (52%) respondents, accounting for a combined 78%. The distinct patterns of news consumption frequency suggest that political affiliation influences not only the choice of news sources but also the frequency of engagement with news. These differences could be shaped by varying perceptions of the media landscape and trust in news sources.

Regarding the duration of news consumption, a vast majority (77.7%) of those who checked the news multiple times per day spent five or more hours accessing news. The ease of accessing news content anytime and anywhere likely contributes to the extended duration of news consumption. Continuous updates, push notifications, and the habit-forming design of many digital platforms can encourage users to check news more frequently. High levels of news consumption can have significant implications for public discourse and the functioning of democracy. Informed citizens are more likely to be civically engaged. However, the quality of the news consumed and the potential for exposure to misinformation or biased reporting also play crucial roles in shaping public opinion and discourse.

When participants were asked how they typically access a specific news source, their answers varied along predictable access points like mobile devices, television, and radio. However, less expected results were found in the age groups primarily using radio as an access point. Respondents who selected radio as an access method were largely between the ages of 29 and 39 (67.2%) and 18 and 28 (32.8%). No respondent who selected radio identified as 40 years of age or older. This suggests that radio is a more popular news medium among younger adults. The popularity of radio among younger adults, particularly those in the 29 to 39 age group, might be attributed to its integration into daily routines, such as commuting, working, or as a background medium that does not require undivided attention, allowing for multitasking. The continued relevance of radio among younger demographics may also be supported by the evolution of radio into fragmented on-demand digital formats, including internet radio, podcasts, and streaming services, which blend traditional radio content with the convenience and personalization of digital platforms.

Most respondents who used a tablet for news access reported not spending time searching (57.9%) or accessing (65.2%) the news. The high percentage of tablet users who spend no time searching for or actively accessing news suggests that tablets may be used more for passive news consumption. The finding also highlights the potential role of automatic news delivery systems, such as push notifications or news widgets, which are common on tablets. These features allow users to receive news updates without actively searching for or accessing news content, becoming a new form of ambient news delivery akin to public consumption of radio and television news.

The use of mobile devices for news was prevalent among adults ages 18-50. Respondents aged 18 to 28 (22.7%), 29 to 39 (30.9%), and 40 to 50 (46.4%) were the primary users, with no respondents over 50 years old engaging with news on mobile devices. Those specifically using cell phones were predominantly in the 18 to 28 age bracket (81.5%), followed by the 29 to 39 age group (18.5%). Educational levels among cellphone users for news were diverse, with participants pursuing high school education being the most common (35.5%), followed by high school graduates (17.8%) and varying levels of higher education. Interestingly, similar to tablet users, the majority of cellphone users reported not actively searching (65.4%) or accessing (63.2%) news but spent considerable time on social media (50.5% for over 4 hours) and the internet (69.9% for 4 to 9 hours). The substantial time spent on social media and the internet among cellphone users, especially for news, highlights the intertwined nature of news consumption with broader internet and social media usage. Blending news with other content types on social platforms can influence the perception, prioritization, and trustworthiness of news encountered in these environments.

Older respondents, aged 62 to 72, primarily used social media for news consumption (59.6%). This data contradicts other data which tends to show that heavy social media use skews younger (Auxier and Anderson, 2021). Younger age groups (18 to 50 years) collectively accounted for 40.4% of social media users for news. The reliance on social media for news, especially among older adults, raises concerns about exposure to misinformation and the quality of news consumed. Research suggests that older adults are the most susceptible to misinformation and share fake news more often than other age cohorts (Brashier and Schacter, 2020). Ensuring media literacy and promoting critical engagement with content is crucial across all age groups, particularly for those who may be more susceptible to misinformation.

Television as a news source showed more even distribution across age brackets, with a significant skew towards older respondents. The 51 to 60 and 61 to 70 age groups each constituted 27.9% of television news consumers, indicating its popularity among these demographics. Respondents aged 40 and above made up 88.2% of those who identified television as their method of access. The level of education among TV news consumers was evenly distributed across different educational attainments. However, a majority

(69.8%) of TV users had an income of \$35,000 to \$49,999, suggesting a relationship between income levels and preference for television news.

This trend may reflect generational differences in media consumption, with older adults more inclined towards traditional media sources. This trend can also be explained by the significant, if temporary, increase in the traditional news media consumption (especially on television) in the early months of the COVID-19 pandemic. According to the study commissioned by the Reuters Institute for the Study of Journalism in 2020, "Over the last nine years, our data have shown online news overtaking television as the most frequently used source of news in many of the countries covered by our online survey. At the same time, printed newspapers have continued to decline while social media have leveled off after a sharp rise. The coronavirus crisis has significantly, though almost certainly temporarily, changed that picture. Television news has seen an uplift in all six countries [including the US] where we polled in both January and April 2020" (Newman *et al.*, 2020, p. 10).

Assessing Credibility (RQ2)

Our second research question explored if and how participants assessed the credibility of information and news sources and what role fact-checking played in this assessment. Many participants across different demographics indicated that they did engage in fact-checking activities. However, most did not explicitly describe a method of source evaluation. They engaged in a wide range of activities when they suspected the information they encountered. Some sought additional information apart from the original source they found questionable. Despite a few participants being aware of established fact-checking methods such as the "5Ws" (who, what, where, when, why) or "lateral reading" (cross-checking information with other sources), the majority did not mention using these techniques. Some described alternative strategies like searching trending hashtags on Twitter or using fact-checking features on social media platforms. This study was conducted before internet browsers like Google Chrome implemented similar story comparison tools in their search engines.

However, some respondents also indicated that they did not engage in fact-checking actions because they immediately dismissed the information as untrustworthy or felt that fact-checking wasn't necessary due to the source's apparent credibility.

Other participants didn't always fact-check, but when something alarmed them or aroused their curiosity, they would seek confirmation of the information elsewhere. Participants who identified as Independent and Republican seemed particularly distrustful of the media. The perception of bias was most strongly felt among respondents who identified as men and those with some college education. Respondents with more time spent on social media and the internet had less trust in the media, possibly indicating a correlation between digital engagement and skepticism towards news sources.

Several interview excerpts cited below illustrate the general skepticism toward the credibility of news sources. A common theme in these excerpts is the belief that news outlets are not providing truthful or unbiased information, with some participants even voicing concerns about fear-mongering or negative influence. Many participants mentioned the importance of verifying information and looking beyond the presented narrative, though very few were able to clearly articulate how they do this. For example, one participant expressed distrust in all sources but noted only that they did their best to make sense of the information: "They're all liars. No, I mean, I know, as I, I think it would be, almost anything I might say at this point, would be probably repetitive but I could reiterate that I think all news sources are biased and I try to, try to navigate my way through them, and try to, try to in my own mind confirm the things that I hear that I think are true and or find reason to legitimately disagree with things that I hear that I think are not true, not valid not trustworthy." In summary, the results showed a widespread lack of trust in news media among respondents, with an understanding that "all news sources are biased." This perception of bias and mistrust was prevalent across all demographics and political ideologies.

Quantitative results revealed that broadcast television, local print newspapers, and online newspapers were highly regarded as the most credible sources across all participants. In general, legacy media was considered more credible than all social media sites (Figure 5). Out of the social media sites, Instagram, Facebook, and Twitter were ranked slightly more credible than YouTube, Snapchat, and TikTok. While there seems to be a clear divide, it should be noted that all sources of news ranked, on average, between the scores of 4 and 6. Interviews suggest that while legacy media is overall assessed as more credible than social media, many still find all media,

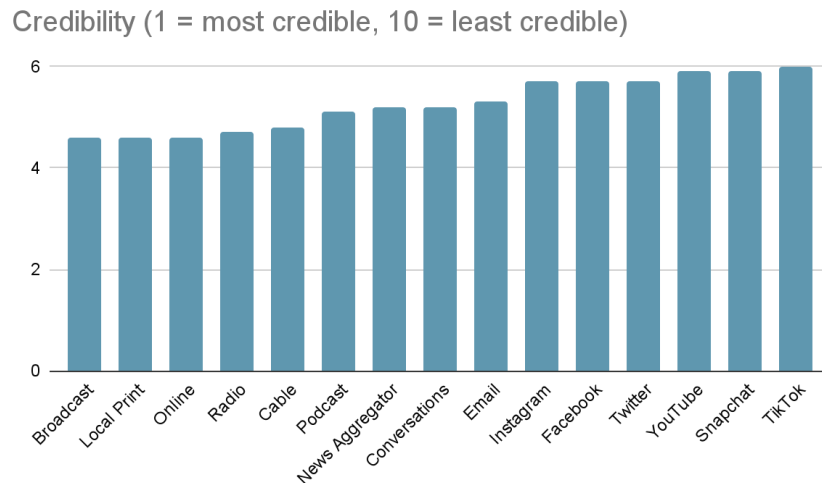


Figure 5: Credibility assessment.

even legacy media to face credibility challenges, largely associated with bias.

While this analysis appears to rather straightforwardly demonstrate that legacy media are found to be more credible than social media, breaking down the data further reveals an important nuance. Social media sources had the greatest range of disagreement, meaning more participants ranked these sources as both the most and least credible overall. Qualitative data revealed no significant age trends for distrust, but those with professional degrees and Democrats expressed more distrust. Facebook, in particular, was less trusted by Republicans or Independents leaning Republican. Overall, the analysis shows a greater dispersion of trusted sources than untrusted sources. Many respondents expressed a sense of bias, lack of factuality, and manipulation of information as reasons for mistrust in news sources. Notably, the CDC was universally regarded as a credible source, with respondents from all age groups, educational backgrounds, and political affiliations using it for information. Older, less educated Democrats tended to trust broadcast news and national TV news. Those with professional degrees and Republican-leaning respondents trusted the CDC the most. Government websites were most trusted by the 18-39 age groups, while trust in newspapers increased with education level. Skepticism of news was widespread across all age ranges, particularly among Independents.

In some cases, political ideology was statistically relevant to whether or not one found particular sources credible. Twitter, broadcast television news, podcasts,

news aggregators, and YouTube were statistically significant and showed moderate effects based on Cramér's V (See Appendix, Table **A1**). In general, those leaning very conservative find Twitter less credible. Liberals and conservatives disagree over how credible podcasts and news aggregators are. Conservatives tend to find YouTube more trustworthy than liberals (See Appendix, Table **A2** for full results).

Limitations

This study has some limitations, particularly regarding the evolving nature of the COVID-19 pandemic and the time that the data was collected. As the pandemic shifted to more endemic stages, public and popular reactions to COVID-19, news about COVID-19, and attitudes towards news and health agencies shifted. This study is, therefore, a snapshot of a moment in time about news consumption during the early stages of the COVID-19 pandemic, with data collection ending soon after the vaccines became available to the public.

The number of responses was also somewhat limited due to its reliance on a specific location for the study, which means the qualitative portion is capturing attitudes from a regional perspective rather than a national. This is significant to our understanding of how COVID-19 news and information was seen through a local lens.

DISCUSSION

The knowledge quiz revealed two major insights. Those leaning liberal and those who sought news first

from broadcast television and online newspapers were more likely to answer questions about COVID-19 correctly. Those leaning conservative and who sought their news first from cable television performed worst on answering questions about COVID-19. Overall, our participants also rated broadcast television and online newspapers as among the most credible sources as well, along with local print newspapers. One other major trend stood out in the data. A small sample of participants who answered that they went to social media first (excluding Facebook), identified as very liberal, and got all of the knowledge questions correct. Twitter, in particular, appeared to be a good source of information for participants. However, it must be noted that this data was collected before the platform was purchased by Elon Musk and rebranded as X in 2023. Our qualitative results further revealed that the majority of women between 18-39 accessed COVID-19 information on Twitter. Combined, this information suggests that, while overall broadcast and online newspapers are the most reliable sources of information for most people, there is a subset of the population that skews younger and more liberal, which has developed an information environment on social media, and particularly Twitter, which provides reliable information.

Those who watched broadcast news, as opposed to cable news, also performed much better on the knowledge quiz. Our questions did not differentiate between different cable news stations such as MSNBC, CNN, or Fox News, warranting follow-up research to determine if the use of particular stations would correlate with different outcomes on the knowledge quiz. Understanding this impact in more detail could be beneficial, as cable news was one of the top three sources of information for participants and was linked to the worst performance on the knowledge quiz.

Our qualitative data collection spanned the release of the first COVID-19 vaccine that was made available to the public in the U.S. Results demonstrate that once people were able to get vaccinated, they largely stopped seeking out information about the pandemic and, in some cases, went so far as to intentionally avoid any further pandemic news. This change in behavior is likely connected to both the information overload experienced prior to the development of the vaccination (Ahmed, 2020), and the “vax and relax” messaging that was prevalent by both the Biden administration and news reporting (Lopez, 2021). In retrospect, this messaging appears to have been a critical mistake. Not only has the virus continued to

mutate in ways that now necessitate updating vaccines, but research has emerged demonstrating that vaccines offer only a small additional protection against developing long-term COVID-19 as compared to those who are unvaccinated (Park, 2024). Those who decided to stop paying attention to information about the virus after receiving a vaccination are less likely to be aware of this information. While such a communication approach may have helped increase the speed with which many decided to get vaccinated, it did so with a degree of certainty that does not match the still-evolving scientific understanding of the long-term impacts of infection beyond acute illness.

Many participants in interviews and open-ended survey questions identified the CDC as an important source of information during the height of the pandemic, alongside other government sites. This indicates potential discrepancies in the general public's perception of news sources, as they often consider government sites and academic papers to be news sources, even though they are not traditionally categorized as such. A relatively high level of trust in CDC in the United States predates the COVID-19 pandemic. According to a 2015 poll from the Pew Research Center, 71% of the US population reported that they view CDC favorably (Pew Research Center, 2015). Using nationally representative data, Kowitt *et al.* (2017, p. 9) “found moderate to high levels of trust in the CDC and FDA [...], which is fairly consistent with a Pew Research study finding 65% of adults trust the FDA and 75% of adults trust the CDC.” Considering that research predating the COVID-19 pandemic has revealed “associations between trust in government and health behaviors and outcomes—including vaccine use, health care utilization, and mental and physical health” (Kowitt *et al.*, p. 2017, p. 9), this might explain why a high percentage of our survey respondents and interview participants identified CDC as an important source of information about the COVID-19 vaccine.

We also noted that participants clearly expressed an understanding of the *need* to evaluate sources, with many claiming that they, in fact, did so. However, very few were able to describe any process that they used coherently. This was linked closely to many of the participants, noting they did *not* fact-check, often because they were getting information from a source that they had already deemed credible, or alternatively, dismissed as untrustworthy. This lack of a coherent strategy is problematic, making those consuming news even more susceptible to cognitive biases such as confirmation bias and the Dunning-Kruger effect

(McIntyre, 2018). It seems apparent that the burden of fact-checking all news is too high for most, which leads to cognitive shortcuts of both trusting and dismissing particular sources of information. While this strategy may offer some benefit when intentionally accessing trusted sources, it does little to help assess information from new sources that one may encounter on social media platforms, possibly opening up those viewers to an anchoring bias, in which one gives undue weight to the first information one hears about a topic (Kahneman, 2013).

Although social media were ultimately ranked as the least credible source of information, these social platforms also saw the most disagreement in those evaluations. While assessing legacy media, most participants rated them toward the upper-middle of the credibility scale. When it came to social media, many people rated these platforms at the extremes of the scale, assigning the collective social media as either 1 or 10 on the scale. When these statistics are analyzed further, it appears that political ideology tends to be correlated with how one assesses the credibility of news sources. Conservatives find Twitter less credible and YouTube more credible (it should be noted at the time of data collection, Musk had not yet purchased Twitter). This finding is noteworthy because so many of the participants noted that they judged whether they could believe a particular piece of information based on how they already assessed the credibility of its source, meaning conservatives might be primed to believe information they see on YouTube and dismiss information they see on Twitter.

Political ideology played a much greater role in determining the credibility of news sources than anticipated. 58.4% of interview participants who said the pandemic reinforced their existing concerns about the credibility of news sources identified as Democrats/Leaning Democrat, while 0% of interview participants who said the pandemic reinforced their existing concerns about the credibility of news sources identified as Republicans/Leaning Republican. While this may be due to the nature of the sample being collected, the qualitative data bears out this predicament, with *implications for partisan delineation of media sources*.

The qualitative findings suggest that cable news and social media are the least trusted sources among participants, especially Fox News, CNN, and Facebook. There were no significant trends with age, education, or ideology on distrust of cable news;

however, age did play a role with regard to specific channels. For example, Fox News was distrusted by those who identified as Democrats; CNN was distrusted by 18-39-year-olds, those with professional degrees, and Republicans; and OAN and Newsmax TV are distrusted by 40-50-year-olds, those with doctorates, and Democrats. Age was not a factor in the distrust of social media; instead, word-of-mouth information was seen as deleterious by those who identified as Republicans.

This impacted how users looked for information during the COVID-19 pandemic, with different networks taking precedence determinant on gender and location. The majority of women interviewed between 18-39 accessed COVID-19 information on Twitter, while the majority of straight women 40-50 years old with college degrees accessed COVID-19 information via the greater apparatus of the Associated Press. Most respondents said they used local news as their source for COVID-19 information, and most others interviewed preferred the CDC or CNN. We found that mostly people who identified as Democrats and made over \$100,000 annually actively sought out information on COVID-19, which means that there was also an economic piece for most interviewees.

The lines between news and information often blur in today's media landscape. The ability to differentiate between news and information is essential for critical thinking and making informed decisions. It is also central to the ability to trust news coverage and the journalistic process. The conflation of the two can lead to misunderstandings and poorly informed judgments. News from news organizations is crafted to inform the public of current events through investigation, verification, and an effort to present a balanced perspective despite potential biases. News sourced from government bodies or other groups is often designed to serve specific objectives, such as policy announcements or organizational updates. It may not undergo the same level of scrutiny for balance or objectivity, reflecting the goals and viewpoints of the issuing entity. The distinction lies in the intent and methodology behind the dissemination of content. Many respondents in this study could not accurately differentiate between news from news organizations and information from non-journalistic entities. This negatively impacted their perception of both. The news was seen as manipulative if it did not present a desired truth, and information sources were held with the same suspicions that individuals had of news sources, perceiving them as having an inherent bias or agenda

that prevented them from achieving the goals of providing news. As a result, confusion, conflation, and low media literacy led to a belief that nothing could be trusted.

CONCLUSION

This study reveals a complex landscape of information gathering, credibility assessment, and the overarching effects of political ideologies and demographics on these processes. The participants' reliance on social media, along with low levels of news literacy, underscores a pervasive distrust in news media among news consumers. This exacerbates the inability of individuals to accurately differentiate between news sources and other sources of information. The study highlights the critical need for more comprehensive news and information literacy education that goes beyond the more common conversations of bias and agenda-setting and focuses on large issues of truth and trust through critical thinking. The exploratory findings of this study suggest that greater attention should be paid to the decision-making process of the individual, not only the decisions themselves. This study seeks to widen that discussion, and highlights a pivot point of news during a period when a single topic dominated cultural and social conversation.

As misinformation continues to spread rapidly, particularly on social platforms, the need for enhanced news and information literacy is increasingly evident. This study serves as a call to action for educators, policymakers, and news organizations to develop targeted interventions that can bolster critical thinking

and news literacy, particularly at a time when the ability to discern credible news is crucial to public health and democracy. The engagement with different news sources, as seen through the lens of this pandemic, provides valuable insights into the evolving dynamics of news consumption and the imperative to foster a more informed and critically engaged citizenry.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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APPENDIX A

Table A1: Statistical Significance of Political Ideology to News Source Credibility

News Source Credibility and Political Ideology	χ^2	p value	Cramér's V
Instagram	(81, N=201) = 92.219	p = 0.185	0.226
Twitter	(81, N=199) = 103.110	p = 0.049	0.240
Facebook	(81, N=218) = 90.976	p = 0.210	0.215
Broadcast Television News	(81, N=221) = 107.170	p = 0.027	0.232
Cable Television News	(81, N=221) = 92.738	p = 0.175	0.175
Radio	(81, N=215) = 82.484	p = 0.433	0.209

Podcast	(81, N=205) = 116.366	p = 0.006	0.251
Local Print News	(81, N=217) = 80.663	p = 0.490	0.203
Online Newspaper	(81, N=214) = 75.040	p = 0.666	0.197
Conversation with Friends and Family	(81, N=217) = 88.974	p = 0.255	0.213
Email	(81, N=214) = 84.590	p = 0.371	0.210
News Aggregator	(81, N=207) = 106.744	p = 0.029	0.239
Snapchat	(81, N=195) = 69.301	p = 0.820	0.199
YouTube	(81, N=200) = 108.524	p = 0.022	0.246
TikTok	(81, N=192) = 88.879	p = 0.257	0.227

Table A2: Impact of Political Ideology on Credibility

Political Ideology	News Source	Credibility	Standardized Residual
1	Twitter	1	2.4
4	Twitter	1	2.6
2	Twitter	6	2.2
7	Twitter	8	2.3
2	Broadcast	9	2.2
2	Broadcast	10	4.0
5	Broadcast	5	2.6
9	Broadcast	3	2.2
1	Podcast	3	2.5
1	Podcast	8	3.6
2	Podcast	9	3.4
7	Podcast	1	2.2
6	Podcast	8	2.3
9	Podcast	5	2.8
2	Aggregator	1	2.4
1	Aggregator	9	2.2

2	Aggregator	2	2.2
6	Aggregator	2	2.5
8	Aggregator	6	2.2
9	Aggregator	5	2.4
1	YouTube	3	3.3
2	YouTube	4	3.7
9	YouTube	5	2.1
9	YouTube	6	2.7
10	YouTube	7	2.5

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