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Cyberchondria and Its Effects on Anxiety during Covid-19 Pandemic

Suman Shekar and Avinash Aravantagi

Abstract

Cyberchondria is a blend of the words cyber and hypochondriac. Social isolation with easily available information on the Internet for little or no cost created a havoc. It is an abnormal behavioral pattern in the emotional state. There were hundreds of social media groups created during the pandemic. Many people including the healthcare workers started sharing their experiences, positive and negative. It created a lot of anxiety and depression among the general population. As we already know people with anxiety and depression react and respond more to information available online without verifying the facts. Though the social media groups helped the readers with innumerable information but it had its flaws. Patients with cyberchondria increased and also the burden on healthcare systems.

1. Introduction

The name cyberchondria was coined in 2000's and is a blend of the words cyber and hypochondriac. As per merriam-webster's Dictionary the definition states, 'excessive concern about once health especially when accompanied by imagined physical ailments'. During the covid-19 pandemic the way in which health-related information was available to a common man changed. The general public is interested in news and wants to know the latest updates.

While information can be knowledgeable and can make people empowered it is also an easy access and can cause serious spread of mis- information. Cyberchondria encompasses a multidimensional construct that involves both anxiety and an element of compulsiveness. Cyberchondria results in time consuming online for reassurance seeking, negative emotional state interference with functioning and also interruption or neglect of other activities.
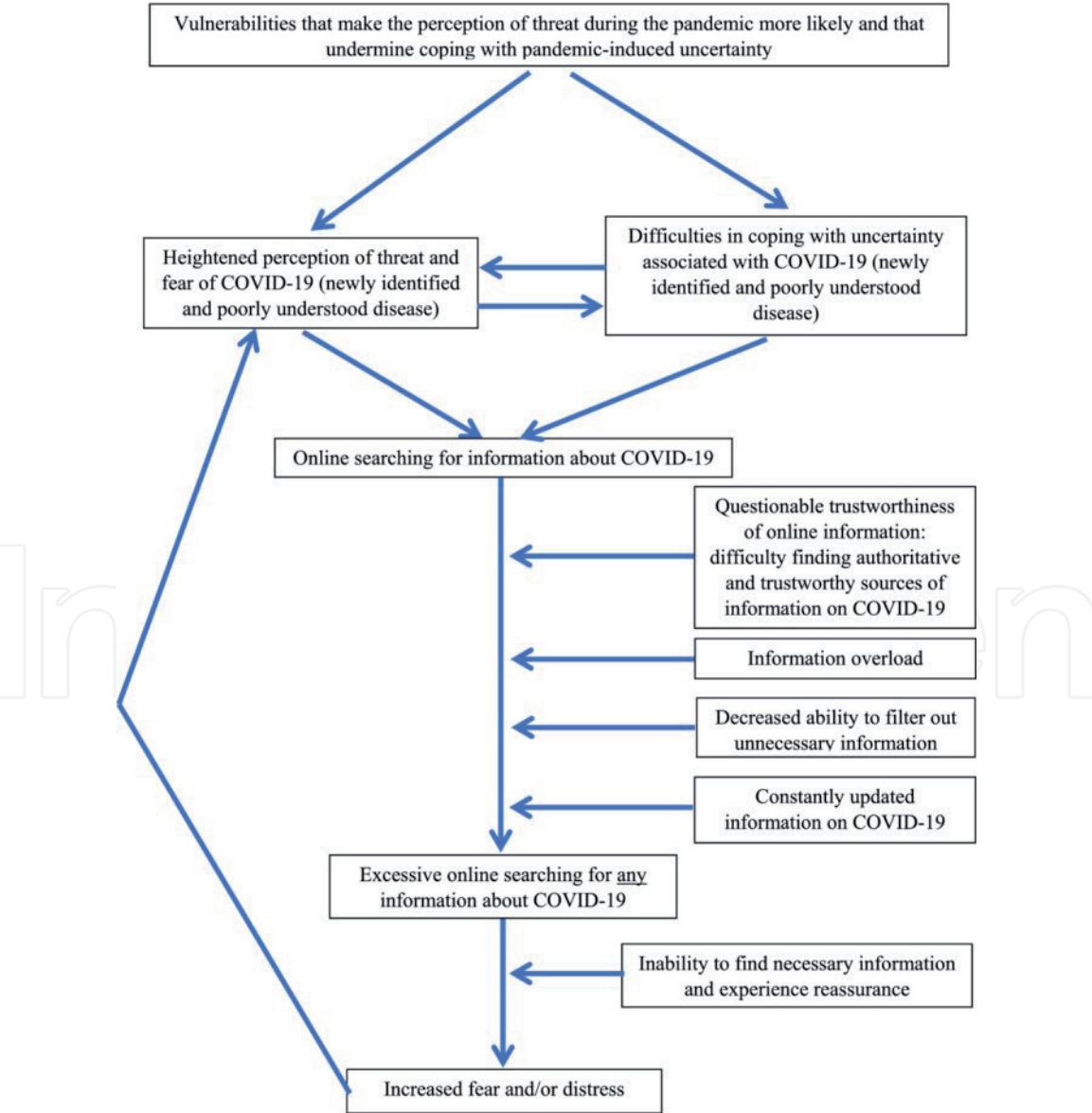
Social isolation with easily available information on the Internet for little or no cost created a havoc. It is an abnormal behavioral pattern in the emotional state. It is now a normal with everyone to get health-related information on the Internet. The tendency of a person with cyberchondria secondary to online information is health-related anxiety. People without hypochondriasis may also become excessively anxious secondary to the online information. They automatically spend more time on the Internet and try to search more information.

2. Underlying anxiety disorders

Our brains are built in for sensitivity to negative news. A recently published article in march 2020 online German survey reported a significantly increasing virus anxiety, especially among individuals with heightened health anxiety trait or also known as hypochondriac's. There were around 1615 individuals who answered the questions and out of which 79.8% were females with a mean age of 33.36 years and the standard deviation of 13.18 [1].

This study during the pandemic showed heightened anxiety (r = .09–.48) levels in individuals with underlying stress or anxiousness about their health.

Negative and misinformation online and in social media has an impact on individuals coping perceptions. This was seen especially during the self-isolation as there was a lockdown in many countries. Cross-sectional study done during this time with the perceived severity of P = 0.002 and self efficacy of 0.003 had a positive impact on the self-isolation intention. At the same time the response cost P < 0.001 affected with self-isolation interventions negatively. As per this study cyberchondria and information overload indirectly affected the self isolation intentions and anxiety levels [2].

Figure 1.
Illustrated by the dynamic relationships between its components which was well described by Alexandra Maftei et al.

There was another survey with a sample participants of 818 number with the age range of 15–67, and the survey concentrated on demographic factors such as age, gender and education. Out of the 818 individuals selected, 65% of them were females and the participated in an online survey. The results as per the survey reported that your, age and being a female are positively associated with cyberchondria. This particular research also investigated the effect of optimism and as well as neurotisim which are two common opposing traits [3].

Optimism also varied as per the age, elderly individuals were more optimistic and were not affected by the information on the social media and Internet compared to younger age individuals. Encouraging a positive outlook on the social media helped quite a few people face their current health crisis with resilience, this was especially seen in the elderly age group.

Also of note is the compulsive health-related online data usage behavior persists despite the distress caused. Hence concluding patients with compulsion disorders are also affected by this. Some authors claim that health anxiety from cyberchondria and obsessive–compulsive symptoms arise from the shared pattern of intrusive thoughts and repetitive, purposeful behaviors and leads to one broad spectrum of obsessive–compulsive disorders [4].

As noted in the **Figure 1** [5] Vulnerabilities that make the perception of threat during this pandemic more likely and that undermine coping are

- Heightened perception of threat

- Difficulty in coping with uncertainty

- Questionable trustworthiness of online information

- Information overload

- Decreased ability to filter out unnecessary information

- Frequent update of information on covid-19

2.1 Heightened perception of threat

The reasons for unexpectedly high levels of anxiety of COVID-19 are diverse and it includes biological factors (e.g., genetic predisposition), financial factors (loss of jobs, increased number of clinic visits), psychological factors (e.g., personality traits such as neuroticism, perceived susceptibility to disease) and emotional vulnerabilities and environmental factors (e.g., panic like societal attitude toward the disease). The experience of fear in the background of a pandemic is multifaceted.

It includes fear of infecting others, fear of unknown treatment plan and fear of the economic repercussions of the pandemic (Taylor et al., 2020) may also drive excessive fear and anxiety.

2.2 Difficulties in coping with uncertainty

As covid19 is a newly identified and poorly understood virus and its pathology and our healthcare systems around the world have not been prepared. Uncertainty and lack of knowledge forms the foundation to fear and anxiety. The term "uncertainty distress" was coined and defined as "the subjective negative emotions experienced in response to the as yet unknown aspects of a given situation" (Freeston, Tiplady, Mawn, Bottesi, & Thwaites, 2020) [6].

Studies such as "Fergus, 2013, 2015; Fergus & Spada, 2017, 2018; Norr et al., 2015; Zangoulechi, Yousefi, & Keshavarz, 2018" have found intolerance to uncertainty is associated with cyberchondria.

2.3 Questionable trustworthiness of online information

Distinguishing between trustworthy and misleading information is not always easy and difficulties in making this distinction have been associated with cyberchondria (e.g., Starcevic & Berle, 2013). A large portion of the information found online, or on social media is unreliable and misleading (e.g., Cuan?Baltazar, Muñoz?Perez, Robledo?Vega, Pérez?Zepeda, & Soto?Vega, 2020, Laato, Najmul Islam, Nazrul Islam, & Whelan, 2020). Hence the term "pandemic of misinformation" (Li, Bailey, Huynh, & Chan, 2020).

2.4 Difficulties in coping with information overload

Abundance of information makes it a challenge to process all the available information. According to Bawden and Robinson (2009), information becomes "a hindrance rather than a help" in excess amounts. The World Health Organization introduced the term "infodemic" to refer to an "overabundance of information" (World Health Organization, 2020).

The reverse mediation model depicted that cyberchondria is associated with self-esteem both directly and through health anxiety and obsessive–compulsive symptoms [4].

2.5 Cause and effect

2.5.1 Masking and vaccine acceptance

There was also a study about conspiracy believes regarding the COVID-19 pandemic in United States. Patterns of media use but associated with reduction in mask wearing and acceptance of the vaccine.

The time period chosen was from March to July 2020. The questions included about conservative and social media usage which negatively related to belief in pandemic related conspiracies. There were 840 people chosen in March 2020 and a survey was conducted and the same people were used to conduct the survey in July. The survey reported the belief during pandemic related conspiracies. There was an increase in conspiracy beliefs (beta = 17, 99% CI .10–.25) compared to the mainstream print with conservative area and social media [7].

2.5.2 Relationship with the primary care physician

As the people believe more in social media and conservative area more than their primary care doctors or general practitioners, there is unnecessary stress in the relationship between their primary care doctors and then. There is a causal relationship with patient-physician trust.

2.5.3 Burden on the healthcare

It also does cause burden on the healthcare system financially. There are multiple visits to the primary care clinic, urgent care and emergency facilities. Telehealth emerged as the main resource to help combat the burden on healthcare. Healthcare expenses secondary to the uncertainty and fear increased.
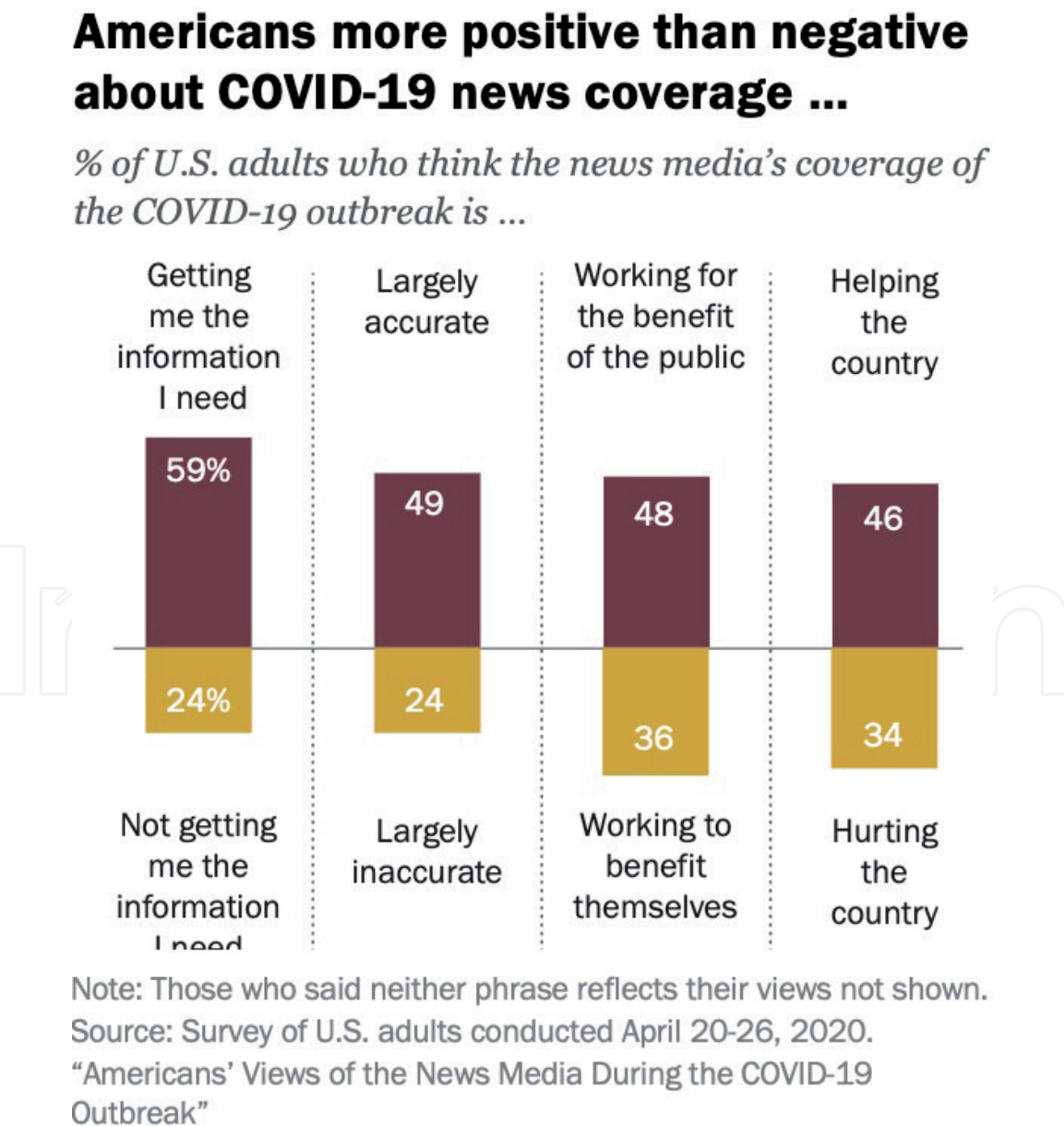
2.5.4 Print media and conventional media

The print and the conservational media like television and radio framed the understanding and created powerful forces at an individual and societal levels. They play a proactive role in shaping the actions of the mass population and thereby influencing policy actions.

The print media was considered a key avenue for transmission of information previously. With advancement in technologies and social media, the information and opinions available through online platforms have a significant impact.

In January 2020, there were around 41,000 English-language articles with the word "coronavirus," of which 19,000 used the word in the headline. Recode which is a technology news website reported that on March 17th 2020, that around 1% of published articles on 3,000 high-traffic news sites were related to the coronavirus. Since then on there was an explosion of the information.

There was a survey in Pew research in April 2020 which reported how Americans perceived print media and its effects, see **Figure 2.**

Americans more positive than negative about COVID-19 news coverage …

% of U.S. adults who think the news media's coverage of the COVID-19 outbreak is …

Note: Those who said neither phrase reflects their views not shown.
Source: Survey of U.S. adults conducted April 20-26, 2020.
"Americans' Views of the News Media During the COVID-19 Outbreak"

Figure 2.
Data from pew research center.

59% of the general population felt they were getting the right information, while 24% felt they did not get the information they required. 49% felt they were largely accurate.

2.6 Social media

Social media emerged as the major media platforms in the recent times. The information was transferred more easily in the conservative media, emails and the word "infodemic" came into existence and practice. Never before in the history of mankind was there a time where in the information was transferred from one end to the other end of the globe so quickly. However there were multiple advantages and disadvantages with information being transmitted so quickly.

A few examples of different types of social media like Facebook, Twitter, Instagram, Snapchat, linkedin. There are also video hosting sites like You Tube, vimeo and tiktok. There are also a lot of community blogs like medium and tumblr. There are also discussions sites like Reddit and quora. These platforms involve large diverse communities. They engage their followers through hashtags and groups.

Twitter: Hashtags such as #covid19anxiety, #coronavirusanxiety #isolation-anxiety #crisistalk Media also has support groups which help to bring a community together to help each other. There were many support groups founded during the pandemic to share their experiences and help each other out.

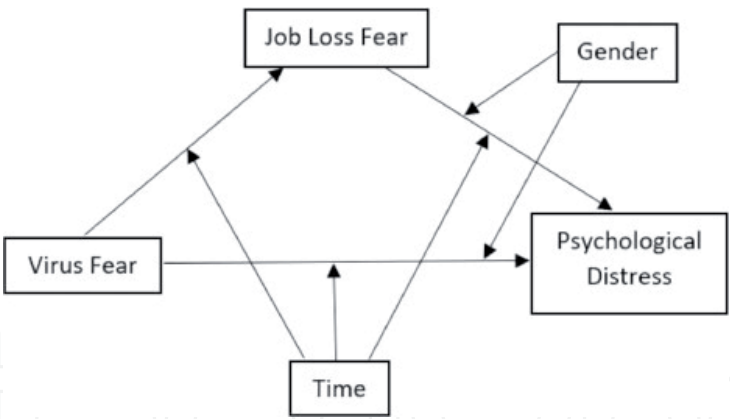Instagram: #covidanxiety, #lockdowndepression.

Social Media also has support groups which help to bring a community together to help each other. There were many support groups founded during the pandemic to share their experiences and help each other out.

2.7 Social media and healthcare workers

Hundreds of Facebook groups were created by physicians for physicians to interact and provide expertise. They included both public and private groups. A few examples as per the **Table 1** are COVID-19 USA physician Facebook group with more than 148,000 members on a single platform inclusive of physicians from all over the world. Coronavirus covid-19 and long covid UK group with more than 7500 physicians.

Physician Groups	Total Members
COVID-19 USA Physician /APP Group	>148000
Coronavirus covid-19 and long covid UK group	>7500
Physician Mom COVID-19 group	> 39,000
COVID-19 physician group	> 29,000
COVID-19 USA healthcare workers PPE subgroup group	> 7000
Community outbreaks COVID-19 group for physicians	> 3000
COVID-19: Real talk from healthcare workers around the globe	> 107,280
COVID-19 physicians memorial	> 1700
COVID-19 mental health support group	> 3000

Table 1.
Names of physician groups in Facebook platform with approximate members.

Figure 3.
Conceptual model tested by Andrew R.Timming et al.

The discussions in these groups ranged from clinical manifestations of covid-19, testing, plasma donation, mental health resources, critical care management, and personal protection equipment [PPE], hydroxychloroquine and now the new mutant strain of covid-19 [B1617]. In earlier months of 2020, multiple videos were made by physicians about safe donning and doffing of the PPE and circulated. From January 2020 to May 2020 saw the formation and coming together of physician communities to help each other. Social media acted like the physician lounges and also a platform for discussion during the pandemic. At the time once there were no guidelines and physicians were unaware of treatment modalities, these platforms helped them to cope [8].

2.8 Economic instability and the news surrounding it

Economic anxiety associated with COVID-19 focused primarily on personality traits correlates with economic anxiety. The study found that low levels of self-esteem, conscientiousness, and high levels of neuroticism and perceived vulnerability to disease were associated with increased economic anxiety and mood disorders during the pandemic (**Figure 3**) [9].

Unemployment rates have increased across major economies causing a major threat to job seekers. International Monetary fund (IMF) estimated the global economy shrunk by 4.4% in 2020. To stop the spread of the virus, many countries ordered non-essential businesses to shut down or lock down. This resulted in supply chains being disrupted, workers were furloughed and laid off. Fear of losing the job caused severe stress and anxiety all across the world.

Direct positive relationship between fear of the virus and psychological distress, but also an indirect relationship between these two variables flowing through fear of losing one's job.

2.9 Preprint versions of the scholarly articles

During the initial phase of the pandemic a preprint version of the scholarly of scientific paper which preceded the peer-reviewed journal were available. A preprint is a full draft of a research paper that is shared publicly without peer review. Just like social media and social media groups they provided fast way to disseminate information. They were made immediately available to the public and also the physicians. Just like social media, the potential problem included that they were not peer reviewed, hence probability of misinformation.

3. Conclusion

Amidst the pandemic which will shape you and the world around you be mindful and compassionate toward self. Eat well. Remain open and empathetic.

Communicate with your family and loved ones. At the same time unplug from social media and news occasionally. Be honest and set boundaries. In the evening hours: decrease stimulation as much as possible. Regulate your breathing is to do deep breathing exercises. Try to get enough rest, do not force yourself to sleep. You need to restore your energy, once you rest for 7–8 hours, your body is rejuvenated. Sometimes change is the push you need, sit back and reflect.

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There is a need for reporters and commentators on media to report verifiable information about the pandemic. Also there is a need for social media platforms to be more proactive in counteracting claims about covid-19 vaccines, claims about mask wearing and conspiracy beliefs. Advanced technologies like natural language processing or determining should be utilized to remove biased and misinformation from social media. Controlling these with regulatory and law enforcement measures would be difficult, but person who is posting unrelevant data should be held responsible.

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