

Analyzing the Public Response on Twitter of Socialized Medicine Following the COVID-19 Pandemic

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ABSTRACT

This research paper aims to analyze data gathered from the popular social media site, Twitter, to gain insight regarding human perceptions on the ongoing discussion of socialized medicine in the United States. The study used both a sentiment analysis and thematic analysis to analyze a sample of tweets referencing socialized medicine and COVID-19 posted between December 2018 and January 2021. However, as the sentiment analysis revealed flawed data due to its nature of only analyzing an individual's tone to a particular subject matter, this research solely relied on the data provided by the thematic analysis. The thematic analysis conducted revealed four recurring themes: irony, disagreement with political beliefs, comparisons to countries with socialized medicine, and beliefs influenced by first-hand experience. The analysis of these four recurrent themes shed light on the complexity of the debate surrounding the topic of socialized medicine in the United States, and the findings of this study suggest the impact COVID-19 had in shifting public opinion to favor the implementation of socialized medicine. However, further research is needed to further understand the complexities of the various healthcare systems and the diverse perspectives held by Americans on this important issue.

Introduction

The idea of socialized medicine — “a healthcare system in which the government owns and operates healthcare facilities, employs professionals, thus paying for all healthcare services” — has been widely debated for many years, with opinions and perceptions varying greatly amongst different groups of people (HealthInsurance.org). The recent coronavirus pandemic has only strengthened the importance of understanding the current healthcare system in the United States and its effect on the various individuals it is meant to support. In the midst of a wide-scale pandemic, the role of the healthcare system is even more paramount, making it all the more crucial to understand the constantly evolving perceptions of citizens towards the system currently in place. This paper aims to contribute to the ongoing conversation by providing a comprehensive overview of the academic literature surrounding the idea of the implementation of socialized medicine in the United States, while specifically focusing on the changing perspectives of citizens following the onset of COVID-19. Through this exhaustive overview, the paper aspires to reveal the current perceptions individuals hold on this topic, as well as better prepare for the making of future decisions as well as future discussions in related aspects of the healthcare field. It is important to note that papers of study were chosen based on topic relevance and credibility, but recently published papers were favored due to the recency of the pandemic as well as the nature of perceptions. Perceptions are constantly changing based on circumstances, issues, and the time, so it is crucial that my sources are up-to-date and reflective of the current population's views on the issue.

United States Healthcare System

Unlike many other countries with comparable living standards and economic status, the United States fails to achieve a comparable performance in healthcare despite investing significantly more money and time than other countries (Brown). The disparities in outcomes for healthcare services among different populations revealed due to the coronavirus pandemic have only served to further highlight the extreme “diverging rates of mortality, disease burden, and other measures of health outcomes between the U.S. and comparable countries” showing the necessity for improvement (Kurani & Wagner). Comparable countries refer to the extent to which data results are similar for a variety of factors measuring a country’s success. Since the U.S. has relatively high living standards, GDP, literacy rate, and life expectancy (measures of a country’s development) comparable countries have similarly high numerical values for most or all of those measures (World Bank). A review of the data prior to and after the coronavirus pandemic shows that the U.S. has consistently fallen behind comparably wealthy and economically advanced countries, identifying areas that require further research and attention.

An important distinction between the healthcare systems in comparable countries and that of the U.S. is the approach to financing and providing healthcare services. The U.S. currently operates a mixed system in which publicly financed government services and privately funded options coexist (ISPOR). This leads to a system with various “eligibility criteria, budgeting frameworks, and financial obligations of patients” making it difficult for the services to be accessible and equitable for all (Butler). To name a few, there are government-financed programs such as Medicare (insurance program for the poor), Medicaid (insurance program for the elderly), and tax-advantaged employer-sponsored coverage (insurance program for working people). Along with these systems and programs, millions of other citizens are able to obtain services through state-level exchange plans. Despite the variety of options, the selective eligibility criteria still prevent many Americans from obtaining the healthcare coverage they need. Furthermore, according to a report made by the Kaiser Family Foundation, a non-profit organization widely recognized as a trusted source of health analyses, and polling data, individuals with lower incomes and therefore limited access to insurance are more likely to face difficulty in accessing required healthcare services, leading to disparities (Kaiser Family Foundation). These disparities are mainly a result of the mixed healthcare system in the U.S., in which access is largely determined by one’s ability to pay for services instead of being guaranteed. Meanwhile, comparable countries with better health service outcomes have all implemented a socialized medicine system, in which the government assumes responsibility for the financing and operation of healthcare facilities and professionals, providing free health coverage to all citizens (HealthInsurance.org). If implemented in the U.S., this system would guarantee under-represented and marginalized individuals free healthcare, essentially acknowledging access to healthcare as a right rather than something that has to be earned. The recent coronavirus pandemic has further emphasized the need for a comprehensive reevaluation of the healthcare system in the U.S. and its approach toward providing accessible and equitable healthcare services to all its citizens.

Additionally, the coined term “universal healthcare” is often used to describe the U.S.’s mixed healthcare system, reflecting the high regard to which the U.S. holds its system. Ever since its establishment, it has often been labeled “among the world’s highest quality healthcare” referencing the strong belief regarding our health system’s support for the citizens of the country (Butler). However, this is far from the truth. In fact, despite the widespread belief in the quality of the U.S. healthcare system, in reality, access to healthcare services remains limited for many, particularly those from marginalized communities (Zieff et al.). The persistent disparities in access and outcomes of treatments once received by different racial, ethnic, and socio-economic groups, highlight the ongoing failures of the U.S. healthcare system to live up to its claims of universality. The term “universal healthcare” in the U.S., therefore, serves as a misleading representation of the state of healthcare in the country, showcasing the deep inequalities that continue to exist.

According to a report from the National Academy of Medicine, a highly respected organization that advises our government and other organizations on issues related to medicine, “persistent disparities in health and healthcare in the United States have been widely documented, and they have had serious consequences for individuals and [their]

communities” (National Academy of Medicine). These disparities are especially prevalent among individuals from marginalized communities and those with inadequate income. In fact, marginalized groups in the U.S., such as Blacks and Hispanics, have been proven to experience extreme declines in healthcare access, quality, and results of treatments (Williams & Collins). These declines reveal the United States healthcare system’s constant inferiority in comparison to that of other comparable countries which do not have nearly as extreme a divide between the quality of care received by various groups of people. Furthermore, individuals of lower socioeconomic status are also put at a significant disadvantage by our current healthcare system due to their obvious financial constraints. Another study published in the American Journal of Public Health, one of the leading public health journals in the world, found that uninsured individuals were more likely to skip necessary medical care due to their financial difficulties, ultimately leading to worsened health outcomes (Sommers et al.). These varying sources all support the claim that despite the widespread belief in the quality of the U.S. healthcare system, there are persistent disparities in access and outcomes among various groups of people.

COVID-19 Pandemic

The recent coronavirus pandemic has caused an unprecedented global crisis, causing the “loss of millions of lives, and [an immense] burden on healthcare systems” (Haldane et al.). The pandemic challenged the response ability of all healthcare facilities and governments throughout the world but has specifically exposed the many limitations of the U.S. healthcare system, some of which include “access barriers, [skyrocketing] prices and costs, inadequate quality, widespread disparities and inequities, and marginalization of public health” (Geyman). These shortcomings are further evidenced by a report made by the Commonwealth Fund, a well-established foundation dedicated to producing high-quality research as well as in-depth analyses on healthcare systems and policy. In this report, which made comparisons between the healthcare systems of 11 countries in measures related to the functioning of a healthcare system, the U.S. ranked last in the measures of “quality, access, efficiency, equity, and healthy lives” (Schneider et al.). This severe underperformance of the U.S. healthcare system in these categories amongst others is best explained by the fragmented nature of the U.S. system where it is very difficult for different caregivers to easily communicate and coordinate treatments effectively for their patients. The fragmentation of the U.S. healthcare system coupled with the ongoing pandemic has left many individuals without any form of care, indicating the severe access barriers between various groups of individuals and inadequacies of our healthcare system when faced with a wide-scale pandemic. The pandemic, on top of these various issues, has also led to skyrocketing prices and costs for services, further contributing to the strain on already overburdened citizens. This is especially impactful when considering the marginalized populations, as their limited access to healthcare was made more prevalent in a system that prioritizes only the wealthy and affluent.

The COVID-19 pandemic has highlighted the strengths and weaknesses of different healthcare systems around the world. Countries with socialized medicine, such as Canada and the UK, have been praised for their preparedness and lower number of COVID-19 related deaths. Such countries were able to respond quickly to the pandemic by implementing advanced measures such as widespread testing and contact tracing all while the U.S. struggled with shortages of basic medical equipment (Davis et al.). On top of this, the UK’s National Health Service was able to rapidly expand its capacity to handle the surge of COVID-19 patients (Morgan). On the other hand, the United States, with its mixed system of public and private healthcare, struggled to keep up with the demands posed. The U.S. faced a shortage of personal protective equipment (PPE), hospital beds, and vaccines, all contributing to a high number of deaths per capita. Furthermore, a report by the Commonwealth Fund referenced earlier revealed that the United States had the highest number of COVID-19 deaths per 100,000 population (103.3) among the 11 countries studied. Canada and the UK had much lower death rates of 25.7 and 67.8 respectively (Schneider et al.). As shown, the differences in the preparedness and number of deaths between countries with socialized medicine and the U.S. during the pandemic are notable. The success of Canada and the UK’s socialized medicine during the pandemic underscores the benefits of a centralized and publicly funded healthcare system in times of crisis.

The COVID-19 pandemic has exposed the many limitations of the U.S. healthcare system and revealed the importance of a more equitable healthcare system able to provide adequate resources and high quality service to all citizens regardless of inherent differences. Although our privatized market-based healthcare system has mostly worked since the establishment of the U.S. healthcare system, the recent global pandemic has shown the need to reevaluate our system in order to prevent another ill-equipped response in the future.

Research Question

The central question of my research is “How has the COVID-19 pandemic affected the perceptions of socialized medicine among Americans?” To answer this question I will be conducting both a sentiment and thematic analysis of Twitter tweets prior to and following the pandemic to test for changing opinions towards its implementation in the United States.

Gap

It is well-established that the United States has a complex and expensive healthcare system, different from those of other comparable countries, that constantly fails to support the needs of its diverse citizens. Despite countless studies on the reason for this issue, there is a severe lack of research regarding the opinions of the citizens and their desires for a system they are heavily affected by. This lack of research has ultimately been caused by the domination of political leaders and medical professionals on any and all discussions on the topic as it has left no room for citizen intervention in such a heavily regulated discussion. A study conducted by Dr. Jill Quadagno, a well-respected sociologist with multiple extensive papers on social policy and healthcare, revealed that the opinions of citizens are often disregarded in such discussions despite the fact that they are often the most affected by the outcome of such decisions (Quadagno). This lack of consideration for the opinions of the general population is very dangerous in that it can lead to biased policies, only in support of a specific population, which can further decrease a healthcare system’s overall effectiveness and efficiency. It is essential that citizens are heard and the main topic in such discussions, as meeting their needs and desires should be what we as a country are striving to accomplish.

To address this inherent gap, my study aims to explore the impact of the COVID-19 pandemic on citizens’ views of socialized medicine. The idea of the implementation of socialized medicine has long been very crucial to such topics in the U.S., and as the recent pandemic has revealed many shortcomings of the United States, it is imperative to understand how opinions have changed as a result. By examining these views, my study aims to reveal any possible changes that should be made and point to possible solutions that may be implemented through further research regarding the topic.

Methodology

My study of the changing public response to the idea of socialized medicine in the United States involved a sentiment analysis of the various tweets posted on Twitter before and after the start of the pandemic. A study was conducted with qualitative data to help understand opinions expressed by tweeters, and quantitative means was used to determine the criteria for selecting tweets to analyze. Due to the possible privacy breach which could occur due to the nature of the study I am conducting, I decided to use public posts available on the social media site Twitter. Twitter posts are generally the preferred social media site for such research studies as the population available on Twitter extends through all age groups, the platform is content and opinion driven rather than image driven, and also very easily narrows the scope of the search engine. These features, that are usually unavailable on other such social media sites make it the ideal platform for analyzing public opinion and response.

The advanced search features offered on Twitter were made very accessible and therefore I very easily could narrow down the number of tweets I would have to view in order to find sufficient and relevant data to support my research. In fact, many studies related to social sciences have used Twitter to analyze mass data regarding public response and opinions to specific topics of interest. A very similar study on public response to COVID-19 conducted by professors at a prestigious university in India, also used Twitter to conduct a sentiment analysis (Pandey et al.). This proves Twitter's versatility and usefulness in conducting studies where large amounts of data regarding public response is necessary.

The recent COVID-19 pandemic has sparked discussions about the efficacy of different healthcare systems, including socialized medicine. To ensure that I would not have an extensive data set to look at, I reviewed tweets only one year prior to and after COVID-19 was introduced to the United States to limit the amount of data I would have to review, and also ensure that COVID-19 would be the only main variable that is affecting the potential responses. Therefore, I limited the tweets I viewed to ones specifically posted between December 1 of 2018 to December 1 of 2019, and January 1 of 2020 to January 1 of 2021. I narrowed my search by grouping keywords into two categories: COVID-19 and socialized medicine. Within the COVID-19 category, I looked at three separate keywords: covid 19, covid, and coronavirus. While I thought about looking into multiple keywords for socialized medicine as well, I eventually decided to look solely at the keyword "socialized medicine," as there was no other word that accurately encompassed the complete meaning of socialized medicine. For tweets posted prior to the introduction of COVID-19, I solely looked at tweets with reference to the word "socialized medicine," while for those posted afterward, I paired the term "socialized medicine" with one keyword from the COVID-19 category to narrow down my search. I further used the advanced search feature to specify the language of the response given to English in hopes of only seeing responses specific to the United States.

Initially, I also considered setting a minimum number of replies, retweets, and likes to ensure that the tweet was representative of many Americans, but I decided against it due to the potential for partisanship bias and lack of data. My preliminary search revealed that tweets with high engagement values were those posted by renown politicians who either leaned strongly left or strongly right. Although their opinions may in fact be representative to some extent, I wanted to reduce the effects of the partisanship in the discussion I was looking into, so I concluded that it would be biased to set a limit to the number of likes, replies, and retweets as the opinions of the general American would be easily overlooked. As mentioned previously, the lack of data also convinced me to eliminate the engagement value criteria. Data from Twitter's official engagement calculator reported that "the median number of both likes and retweets is 0.5," which suggests that most tweets have very little engagement (Mention.com). As most tweets, controversial or not, have very little engagement, to gather a good amount of data, it was crucial that that component was removed entirely.

After inputting all of these into the advanced search feature, I inputted all the tweets into Google Sheets and downloaded the text analysis extension made by MonkeyLearn. I decided to use this specific extension through extensive research on various web services for sentiment analysis of social media sites. A sentiment analysis is a computer-generated tool which uses natural language processing to "identify and extract subjective information in source material" to determine the emotional tone of a writer to a specific thing (Gupta). According to a study conducted by a prestigious engineering journal, IOP Conference Series: Materials Science and Engineering, a comparison of various web services revealed that MonkeyLearn's sentiment analysis had "the lowest MSE (mean square error) score of 14%" (Basmmi et al.). As the low MSE score reflects the high accuracy of the service in sentiment analysis, I was confident that it would provide me with favorable results.

However, it is necessary to address the limitations of this method. Although I was hopeful that specifying the language of the response given to English would provide me tweets from users only in America, that was not the case and I often found tweets posted by users living in Canada and the UK, both of whom also predominantly speak the English language. Moreover, it became apparent that sentiment analysis was not an adequate way to collect data on individuals' opinions towards socialized medicine. This was because MonkeyLearn was unable to distinguish between

the sentiment towards a specific concept and the overall tone of the tweet, which resulted in incorrect sentiment assignments. To further clarify, when reviewing all the tweets individually, I realized that MonkeyLearn is unable to catch the sentiment of individuals towards a specific concept, and rather catches the tone as a whole. Therefore, the tool often incorrectly assigned the sentiment to be negative when the tweeter thought positively of the idea. In fact, the pie charts below represent just how inaccurate the sentiment analysis actually was in assigning the sentiments. The highest accuracy for the one tweet before and the four tweet pairings after COVID-19 was in fact only 51% proving something else needed to be done in order to accurately make conclusions.

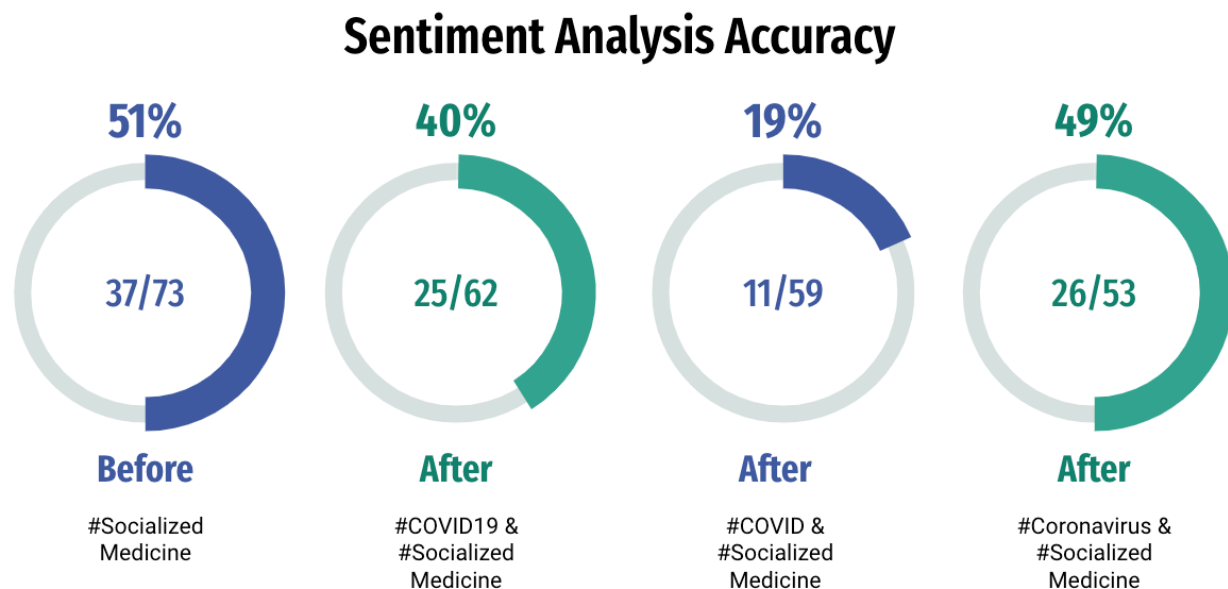


Figure 1

Thematic Analysis

To overcome this limitation, I performed my own thematic analysis, which allowed me to identify overall themes and accurately detect the public's sentiment toward socialized medicine.

A thematic analysis is a data analysis method that identifies and examines prominent themes found in data (Braun et al.). This technique helped me to delve deeper into the sentiment expressed by individuals and determine whether this sentiment was a result of negative or positive feelings towards a specific aspect of the current healthcare system, rather than towards socialized medicine as a whole.

The thematic analysis was critical to understanding the true opinions of the American public towards socialized medicine. While the sentiment analysis gave a general overview of the emotions present in the tweets, it was not enough to fully grasp the underlying reasons behind those emotions. The thematic analysis allowed for a deeper dive into the data to identify patterns and themes, which helped to uncover the real concerns and opinions of the American public. The tweets revealed the highly partisan nature of the country, with individuals easily identifiable based on their political leanings. However, the thematic analysis went beyond political affiliations and delved into the specific reasons why individuals felt positively or negatively toward the idea of socialized medicine. The four main thematic categories that emerged were irony (cognitive dissonance among politicians), disagreement with political beliefs, comparisons between America and other countries with socialized medicine, and beliefs influenced by first-hand experience. These categories provided a comprehensive understanding of the attitudes and perceptions of the American public towards socialized medicine and helped to shed light on potential areas for improvement and future consideration.

Findings

Theme	Definition
Irony (cognitive dissonance among politicians)	Many tweets contained expressions of sarcasm and irony towards politicians whose actions and beliefs were misaligned. Codes used to detect this irony included the identification of satirical language, references to specific politicians, or mentions of articles that reported on controversial events.
Disagreement with political beliefs	Many tweets expressed a stark disagreement with the beliefs of the opposing political party. Codes used to detect this disagreement included the identification of hostile language, mention of specific parties (e.g. liberal, conservative, Republican, Democrat), and insults aimed at discrediting an individual's intelligence (e.g. "stupid") were used.
Comparisons between America and countries with socialized medicine.	Many tweets expressed views comparing the healthcare system in the United States to those in other countries that utilize socialized medicine. Some tweets expressed dissatisfaction with the current system and highlighted the benefits and successes of countries with socialized medicine. Others expressed contentment with the current system and pointed out the failures and drawbacks of socialized medicine. Codes used to detect these comparisons included direct references to other countries and words indicating complaints or satisfaction.
Belief influenced by first-hand experience	Many tweets also reflected on personal experiences and opinions related to the idea of socialized medicine. Codes used to identify these were mentions of familial relationships (such as "parent," "sister," "brother," or "family member"), and words that reflected on the enduring memories of or experiences related to a specific event.

Discussion

Recurring Theme 1: Irony (cognitive dissonance among politicians)

Social media is known for its quick and often impassioned reactions to current events, and this was reflected in the tweets collected. Many individuals pointed out the irony of controversial actions taken by political figures, particularly the hernia surgery of Rand Paul in Canada, which has socialized medicine, and the free treatment received by President Trump at the Walter Reed National Military Medical Center. Both politicians were infamous for speaking out against socialized medicine, yet their personal actions showed otherwise. This caused a great deal of controversy among Twitter users, resulting in many tweets that criticized their actions and ultimately expressed support for socialized medicine.

The irony surrounding these two specific political figures sparked a significant number of tweets expressing support for socialized medicine and ultimately led many users to question their credibility and beliefs. The misalignment between the politician's statements and actions caused the conversation surrounding socialized medicine to shift to a more positive view. This discussion helped shape the public's evolving views on the topic and hence made these politicians imperative to include in the analysis. These two instances and other related occasions of the actions of politicians regarding socialized medicine were recurrent themes throughout the Twitter conversation, providing valuable insight into the changing public perception of the issue.

Recurring Theme 2: Disagreement with political beliefs

A second emerging theme shown through the tweets of individuals was the outright disagreement tweeters expressed to commonly held beliefs of their opposing parties (e.g. Democrats and Republicans). As the time period immediately following the onset of coronavirus was around the season of presidential elections, individuals greatly expressed their opposing opinions through the form of comments to ideas expressed in the presidential debates or other general prevalent beliefs of the opposing party. This political disagreement was a major theme seen in the tweets collected, with individuals from different political affiliations clashing over their beliefs on socialized medicine and the specific role of the government in healthcare-related discussions. While the discussion was heated, it revealed how deeply individuals held their political beliefs and how fiercely they are willing to defend them. Specifically, regarding healthcare, a common trend found was the fact that Democrats were significantly more supportive. Therefore, the data found for this specific theme could be skewed as people against socialized medicine would have been less inclined to post about these beliefs. This due to the fact that the U.S. is already a country against the addition of socialized medicine implying that there is no need to express disagreement in hopes of enacting a change. Although this recurring theme also accounted for a significant number of posts from politicians, which was something I wanted to avoid while conducting my study, most of the politicians were very unknown as shown by their low engagement values, so although not preferable, it still addresses the concerns of citizens wanting to make a change.

Recurring Theme 3: Comparisons between America and Countries with Socialized Medicine.

The ongoing COVID-19 pandemic had a significant impact on the discussion of socialized medicine on Twitter, resulting in the emergence of an additional theme among the tweets collected. With the rising number of affected individuals and later deaths through a COVID diagnosis, many Twitter users began comparing the healthcare systems of countries with socialized medicine to that of the United States. This comparison became a recurring theme among many tweets, with various individuals highlighting the successes of countries with the implementation of socialized medicine in controlling the spread of the virus and reducing mortality rates. This specific recurrent theme was a topic of heated debate among Twitter users with some criticizing the U.S. system for its inability to provide adequate healthcare to all citizens, while others argued that the government should not have such a prominent role in providing healthcare in the first place. However, as a whole there were many more tweets expressing support for socialized medicine as a viable solution to the growing healthcare crisis in the United States.

One major argument for socialized medicine presented in the tweets was the lower death rates seen in countries with socialized medicine systems. Many users cited statistics from countries like Canada, the UK, and Australia, where mortality rates from COVID-19 were significantly lower than in the U.S., as evidence of the benefits of a socialized medicine system.

The emergence of this theme in the tweets collected highlights the impact of the pandemic on public perception of socialized medicine. The crisis showcased the weaknesses of the U.S. healthcare system, shifting public perception to be in support of socialized medicine as a feasible solution to the many problems prevalent within the country. The comparison between the U.S. healthcare system and those of countries with socialized medicine is likely to continue to be a recurring theme in discussions of healthcare on social media, particularly in relation to the pandemic.

Recurring Theme 4: Belief influenced by first-hand experience

A fourth recurring theme that emerged from the analysis of tweets was the opinions expressed by individuals based on their personal experiences with socialized medicine in other countries. Many tweets came from individuals who

had lived in or visited countries with socialized medicine, and their experiences played a crucial role in shaping their views on the issue. These individuals shared stories of how they received prompt medical care and did not have to worry about the financial burden that often comes with healthcare in the United States. They praised the accessibility and affordability of healthcare services, including treatments and medications, and expressed a desire for similar systems to be implemented in the United States.

On the other hand, there were also tweets from individuals who had negative experiences with socialized medicine. These individuals highlighted various issues with socialized medicine, specifically long wait times, lack of choice, high taxes and costs, as well as poor quality of care. Some tweeters mentioned waiting for months to receive treatment for a medical condition, which negatively impacted their health and quality of life while other tweets complained of the lack of autonomy that comes with socialized medicine. With a socialized medicine plan, patients may not have the option to choose their healthcare provider or treatment plan, and medical decisions may be made by government officials rather than just a decision made between healthcare professionals and their patients. This lack of choice often led to frustration and dissatisfaction among tweeters who felt that their medical needs were not being adequately addressed. Finally, many tweets also mentioned the high taxes and costs associated with socialized medicine. While healthcare may be "free" at the point of service, individuals are essentially paying for it through their taxes, which can be a significant burden, especially for those with low incomes. These expressions of dissatisfaction reveal the possible drawbacks of a socialized medicine healthcare system that were not as adequately represented in other recurrent themes where there was overall more support.

Overall, the tweets expressing opinions based on first-hand experience in a socialized medicine country provided valuable insight into the practicalities of implementing such a system in the United States. These personal stories helped to put such issues into perspective and allowed individuals without first-hand experience to gain a reality of what the situation is like for those on the opposite side of the spectrum. As the internet mostly expresses the positives of its implementation, these experiences revealed the realities that are not as commonly expressed. These tweets highlighted the complexities of the issue and revealed the need for careful consideration and analysis to come to a conclusion regarding its implementation in the U.S.

Findings

The recurrent themes aided me greatly in coming to a conclusion and with the data gathered I was able to determine that overall support increased from 47% to 77% with each of the recurring themes also increasing significantly. As shown in the charts listed below, before COVID, the only theme that showed consistent support for socialized medicine was recurrent theme 1, due to the nature of individuals to be more inclined to post in response to the controversial actions of other individuals. However, with the aftermath of COVID-19 all of the recurrent themes showed greater support indicating the positive effect the global pandemic had on people's perceptions of socialized medicine.

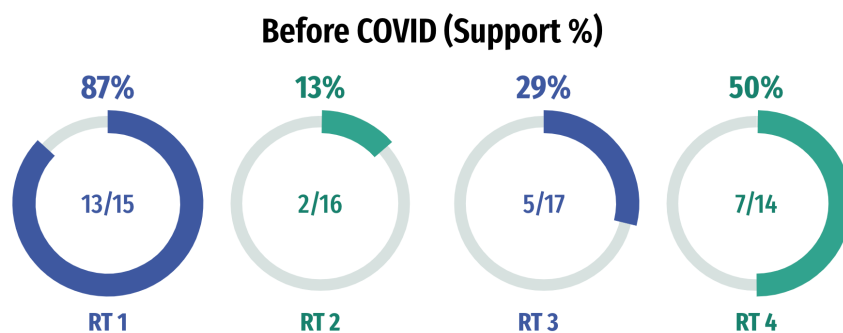


Figure 2

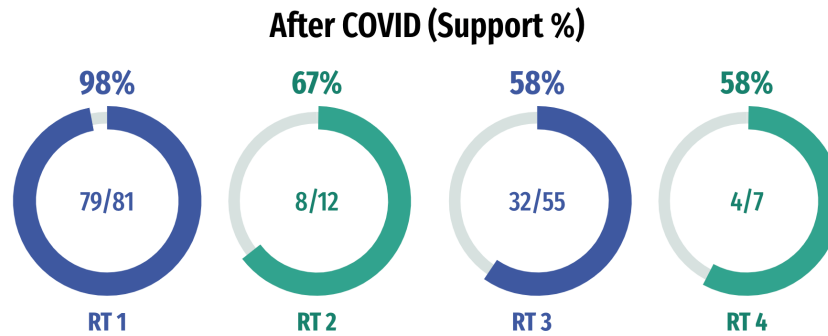


Figure 3

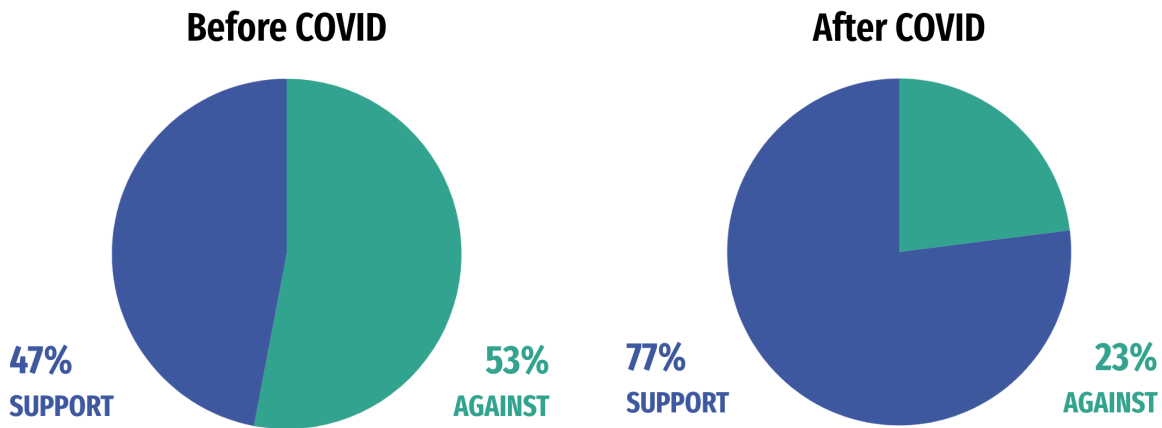


Figure 4

Conclusion

The analysis of Twitter data revealed several recurring themes related to socialized medicine in the United States, which can answer my research question regarding the public opinion on socialized medicine following the pandemic. The four developed themes of irony (cognitive dissonance among politicians), disagreement with political beliefs, comparisons between America and countries with socialized medicine, and belief influenced by first-hand experience shed light on the complex and ongoing discussion surrounding socialized medicine in the U.S. and the various factors shaping public opinion on this topic. Many tweets expressed concerns about the accessibility and affordability of healthcare services, particularly for low-income individuals. Others discussed the role of government intervention in medical decisions and the potential for long wait times under a socialized medicine system. Additionally, there were comparisons made between the U.S. and other countries with socialized medicine, with some pointing to their successes as a reason to implement such a system in the U.S., while others highlighted their failures as a warning against it. The outbreak of COVID-19 further intensified the debate on socialized medicine, as many saw the pandemic as evidence of the shortcomings of the U.S. healthcare system and the need for a more comprehensive solution. Despite initial negative sentiment towards socialized medicine, shown through an insufficient sentiment analysis, the thematic analysis on the other hand showed that overall opinion has shifted significantly towards a more positive outlook following the onset of the COVID-19 pandemic.

Although this study can be useful in many ways, it is important to note that it solely focuses on the tweets in relation to socialized medicine. As Twitter is a public platform where individuals with stronger opinions are more

inclined to post, there may be response bias ultimately meaning that this study does not capture the full spectrum of opinions regarding healthcare in the United States. Furthermore, the use of Twitter as a data source causes an inability to verify the accuracy of the information shared in tweets as it is a source where any and all individuals can post with sole access to an account, which can be made simply with an email address. Moreover, while the COVID-19 pandemic has undoubtedly had a significant impact on public opinion towards socialized medicine, it is important to consider that the implementation of socialized medicine would involve complex policy changes to our long-standing system and therefore possibly have significant economic implications. Overall, while this study sheds light on the ongoing discussion surrounding socialized medicine, further research is needed to better understand the complexities of healthcare policy and the diverse perspectives held by Americans.

References

- Basmmi, A., Halim, S., & Saadon, N. (2020). Comparison of Web Services for Sentiment Analysis in Social Networking Sites. *IOP Conference Series: Materials Science and Engineering*, 884, 012063. Retrieved from <https://iopscience.iop.org/article/10.1088/1757-899X/884/1/012063/meta>
- Brown, L. D. (2003). Comparing health systems in four countries: Lessons for the United States. *American Journal of Public Health*, 93(1), 52-56. Retrieved from <https://doi.org/10.2105/ajph.93.1.52>
- Butler, S. M. (2020). Achieving an equitable national health system for America. *Brookings Blueprints for American Renewal and Prosperity*. Retrieved from <https://www.brookings.edu/research/achieving-an-equitable-national-health-system-for-america/>
- Davis, K., Abrams, M. K., Stremikis, K., & Schoenbaum, S. C. (2021). How other countries' health care systems compare to Canada's. *The Commonwealth Fund*. Retrieved from <https://www.commonwealthfund.org/publications/issue-briefs/2021/mar/how-other-countries-health-care-systems-compare-canadas>
- Geyman, J. (2021). COVID-19 Has Revealed America's Broken Health Care System: What Can We Learn? *International Journal of Health Services*, 51(2), 188-194. Retrieved from <https://doi.org/10.1177/0020731420986804>
- Gupta, S. (2018). Sentiment Analysis: Concept, Analysis and Applications. Retrieved from <https://towardsdatascience.com/sentiment-analysis-concept-analysis-and-applications-6c94d6f58c17>
- Haldane, V., De Foo, C., Abdalla, S., et al. (2021). Health systems resilience in managing the COVID-19 pandemic: Lessons from 28 countries. *Nature Medicine*, 27, 964-980. Retrieved from <https://doi.org/10.1038/s41591-021-01373-4>
- HealthInsurance.org. (n.d.). Socialized Medicine. Retrieved from <https://www.healthinsurance.org/glossary/socialized-medicine/>
- ISPOR. (n.d.). US Healthcare System Overview: Background. Retrieved from [https://www.ispor.org/heor-resources/more-heor-resources/us-healthcare-system-overview/us-healthcare-system-overview-background-page-1#:~:text=The%20US%20healthcare%20system%20does,health%20insurance%20plans\)%20market%20coverage.](https://www.ispor.org/heor-resources/more-heor-resources/us-healthcare-system-overview/us-healthcare-system-overview-background-page-1#:~:text=The%20US%20healthcare%20system%20does,health%20insurance%20plans)%20market%20coverage.)
- Kaiser Family Foundation. (2021). Key facts about the uninsured population. Retrieved from <https://www.kff.org/uninsured/issue-brief/key-facts-about-the-uninsured-population/>
- Kurani, N., & Wagner, E. (2021). How does the quality of the U.S. health system compare to other countries? Peterson-KFF. Retrieved from <https://www.healthsystemtracker.org/brief/how-does-the-quality-of-the-u-s-health-system-compare-to-other-countries/>
- Mention.com. (n.d.). Twitter Engagement. Retrieved from <https://mention.com/en/reports/twitter/engagement/>
- Morgan, R. (2021, January 19). What can the NHS learn from Canada's health system? *The Guardian*. Retrieved from <https://www.theguardian.com/society/2021/jan/19/what-can-the-nhs-learn-from-canadas-health-system>

- National Academy of Medicine. (2002). Unequal treatment: Confronting racial and ethnic disparities in health care. Retrieved from <https://nap.nationalacademies.org/catalog/12875/unequal-treatment-confronting-racial-and-ethnic-disparities-in-health-care>
- Pandey, D., Wairya, S., & Pradhan, B. (2022). Understanding COVID-19 response by Twitter users: A text analysis approach. *Heliyon*, 8(1), e08302. Retrieved from <https://doi.org/10.1016/j.heliyon.2021.e08302>
- Quadagno, J. (2004). Why the United States has no National Health Insurance: Stakeholder Mobilization against the Welfare State. *Health and Health Care in the United States: Origins and Dynamics*, 45, 25-44. Retrieved from https://www.researchgate.net/publication/7956544_Why_the_United_States_has_No_National_Health_Insurance_Stakeholder_Mobilization_Against_the_Welfare_State_1945-1996
- Schneider, E. C., Shah, A., Doty, M. M., Tikkanen, R., Fields, K., & Williams II, R. D. (2020). Mirror, mirror 2020: Reflecting poorly: Health care in the US compared to other high-income countries. *The Commonwealth Fund*. Retrieved from <https://www.commonwealthfund.org/sites/default/files/2020-07/Mirror-Mirror-2020.pdf>
- Sommers, B. D., Baicker, K., & Epstein, A. M. (2012). Mortality and access to care among adults after state Medicaid expansions. *American Journal of Public Health*, 102(2), e1-e8. Retrieved from <https://doi.org/10.2105/AJPH.2011.300431>
- Williams, D. R., & Collins, C. (2001). Racial residential segregation: A fundamental cause of racial disparities in health. *Public Health Reports*, 116(5), 404-416. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1497358/>
- World Bank. (n.d.). United States. Retrieved from <https://data.worldbank.org/country/US>
- Zieff, G., Kerr, Z., Moore, J., & Lee, S. (2020). Universal Healthcare in the United States of America: A Healthy Debate. *Epidemiology & Public Health*, 1(1), 1-6. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7692272/>