Media Portrayal of the COVID-19 Outbreak in Pennsylvania

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We investigated the media during the initial outbreak of COVID-19 in Pennsylvania to see what we could discover about news reporting on the pandemic. We conducted content analysis of articles published during the dates of March 6-7, 2020 from the Philadelphia Inquirer and suburban newspapers surrounding the Philadelphia area. The articles were analyzed using four frames: "conflict frame", "economic impact frame", "morality frame", and "human interest frame". The results indicated that 51.4% of the coded articles mentioned human interest, 71.4% of the coded articles mentioned urgency, and 94.3% of articles mentioned at least one form of protective action to be taken against the virus. We concluded that a sense of urgency and need for protective actions dominated the media conversation.

INTRODUCTION

The COVID-19 pandemic is unlike previous virus outbreaks (1). As of May 25, 2020, the U.S. had the most cases in the entire world (28). Due to the pandemic's unique nature, there is little research on COVID-19 disaster reporting (32). Because of this, we chose to study media portrayal of the COVID-19 outbreak in Pennsylvania. As countries around the world continue to suffer a devastating loss of life and economy from the pandemic, it is also becoming clear that such global pandemics are likely to happen again in the future (22). Our hope is to learn from the current event and prepare better for the future.

A rapidly evolving situation, the pandemic has garnered news headlines for months. Studies have indicated that the media reporting plays a vital role in how a community reacts to extreme events and can determine the preparedness and response levels of individuals (4; 25). The public reacts to disaster situations with urgency depending on how the event is reported. While scholars have examined media reporting on natural disasters, the unprecedented nature of the COVID-19 pandemic gives us the opportunity to examine the same for a pandemic.

The purpose of this study is to examine the media coverage of the outbreak of COVID-19 in Pennsylvania. Specifically, this paper is guided by the following research question: *What frames were most prevalent in newspaper reporting of the COVID-19 outbreak in Pennsylvania?* The question is important and should be examined because the choice of frames influences public perception and hence disaster policies. Identifying predominant frames in newspaper reports can help us to understand possible biased reporting by newspapers. This can inform future practices in pandemic reporting. Further, future work

on this study involves additional collection of data on COVID-19 response policies, wherein we can analyze how media reports might have influenced response by local governments in Pennsylvania.

The analysis is based upon coding 35 articles published in newspapers circulated in the Philadelphia metropolitan area. We used framing theory to build our coding instrument to analyze the articles. Our findings suggest that the media predominantly used human interest frames, communicated what protective actions to take, and highlighted the urgency of preparedness/prevention of the virus.

The paper is organized in the following way: in the next section, we will unpack existing literature surrounding framing theory and predominant frames that were found in analysis of media reporting on previous disasters. Then, we will outline the timeline of the COVID-19 response in Pennsylvania. This will be followed by an explanation of research methods and our findings. Finally, we will present our conclusions, limitations, and future course of action of this study.

LITERATURE REVIEW

Media coverage in the wake of disasters determines what information the public receives, thus influencing the perception of the event and public response (4; 25). Mass communication scholars rely on "framing theory" to analyze the content of various media reports (15). The basic premise of framing theory is that the media focuses attention on certain events, and then decides how these events are conveyed to the public by using certain news frames (34). While scholars have defined news frames in multiple ways, the general definition states that frames are "conceptual tools which media and individuals rely on to convey, interpret and evaluate

information" (24). According to Chong and Druckman (7), "Framing refers to the process by which people develop a particular conceptualization of an issue or reorient their thinking about an issue." In other words, framing helps to organize information into structures that convey certain messages to readers (11).

Scholars studying framing theory have identified different news frames based on the issue being reported (2). Some of the topics wherein framing theory has been utilized to study newspaper coverage are politics, civil unrest, reporting on pro-choice and pro-life issues, environmental issues, and crises. These studies have primarily used framing theory to examine major news frames being used in respective events, and the impact of reported frames on public perception and attitudes.

An and Gower (2) identify five major frames utilized for crisis reporting- responsibility, conflict, human-interest, morality, and economics. A frame represents a lens a particular event can be viewed through and reflects a spin on that event applied by the media, it allows the audience to think of an event within a specific context. These five frames are distinct and independent from each other. The responsibility frame refers to the attribution of responsibility of the cause or certain solutions of the event to an individual or a group or the society. The responsibility frame is frequently the most used as media and the public look to assign blame for a crisis (2). Responsibility is usually assigned to an organization, rarely is it placed upon a singular head.

The human-interest frame refers to assigning a human face or emotional angle to an issue, such as the stories of first responders or victims. The morality frame puts the event in the context of morals, social prescription, and religious tenets. The morality frame is used only in a certain type of disaster, where tragedy prevailed due to inept leadership, cost cutting measures, and high levels of preventability. The economic frame refers to reporting an event in terms of the economic consequences of the event on an individual, organization, or societal group (2). The economic frame is the second most frequently used. Different types of crisis, from natural disaster to economic catastrophe, may merit the use of only some frames.

While An and Gower (2) developed the five frames based upon a study of organizations that faced crisis over a 1 year period, their framework has been used by other scholars to analyze other types of crisis like the Haiti earthquake of 2010, the Irish pork crisis of 2008, the 2009 H1N1 pandemic, and other organizational crisis faced by various corporations. In the context of COVID-19 reporting, the study conducted by Jung Oh et al. (20a) on H1N1 pandemic reporting by American and South Korean newspapers is of relevance to our study. When examining media coverage on the H1N1

outbreak, the authors found that the issue of the pandemic ranked only 10th in the American news cycle and the predominant frame utilized in reporting was the responsibility frame. The authors have further explained that this resulted from an expectation among constituents in America that their government is responsible and capable of taking care of the public thus highlighting the issue of roles and responsibilities in the H1N1 response.

It should be noted here that the scale of the COVID-19 pandemic in the United States is much bigger than that of the H1N1 2009 pandemic. The CDC reports that while the total death count in the U.S. during the H1N1 pandemic was around 12,000; as of July 25, 2020, the death count from COVID-19 in the U.S. is around 149,000. Based on the magnitude of impact of COVID-19, we expect media reporting in the U.S. to be different from the 2009 epidemic.

News frames impact attitudes and judgement of the public on reported issues (34). Studying news frames in disaster reporting becomes important because public officials are assumed to respond to issues that the constituents perceive to be important. When media frames emphasize only on certain aspects of a reported event—it determines what factors of an issue the audience will consider to be important, accordingly shaping public policies (25).

While the choice of frames has policy implications in emergency management, studies have also suggested that media coverage of certain frames over others is common. Prat and Stromberg (21), suggest that media outlets earn profit in two ways- "audience related revenues and bribes from politicians." Hence in democratic countries, where the press is free from government influence, the media will report only what it thinks to be "news-worthy" in order to generate maximum readership related revenues. Media reporting of events, in order to gain maximum public attention, often involves dramatizing events (30). It can be argued that, since human-interest and conflict frames evoke more emotional responses from the reader (6; 30), usage of the two frames help in dramatizing a certain event being reported. Similarly, reporting in terms of personal stories of disaster victims and survivors makes the event easier to understand for the wider audience and hence attract more readership.

On the other hand, it should also be noted here that reporting "hard-data" facts like statistics on disaster losses, or policy changes, may not evoke such emotional responses from the audience at large. Although such reporting is important for policy makers and more trained audiences, it may not be as profitable. Liu (20a), for example, examines the difference in frames utilized in disaster reporting by state emergency management

agencies and the media. The author finds significant differences regarding reporting of the human-interest frame, and disaster education frame. A significantly higher frequency of media articles used the human-interest frame, while practitioner outlets reported a higher frequency for the disaster education frame.

Selective reporting leads to the public's perception that the reported frames are of greater importance than others (3). This phenomenon was evident in the media coverage of Hurricane Katrina. In initial reports, the devastation of Katrina was viewed through the natural impacts of a hurricane (25). Soon after, media reports started characterizing disaster victims as "opportunistic looters" and "violent criminals" (25). This led to less coverage of community rebuilding needs and more coverage of civil unrest and the media's eventual comparison between the war in Iraq and conditions in New Orleans (25). This classification of New Orleans as an "urban warzone" (3; 25) directly led to the militarized response plan (25).

Within the canon of disaster reporting literature, there is very little study of media coverage on pandemics. A 2009 study on the 1968 Hong Kong Flu found that the media is a "critical component" of early warning systems (29). Similarly, during the current COVID-19 crisis, public health officials have relied on the usage of newspapers, government websites and digital resources like social media to encourage households and institutions to take protective actions to limit the spread of COVID-19 (see—CDC, Pennsylvania Health Department websites). Some other studies like that of Jung Oh et al. (18) that have studied reporting on the H1N1 pandemic of 2009, have found that the event did not get prominence within the U.S. news cycle (19). Examining reporting of the COVID-19 pandemic can thus provide us with unique insights into the reporting process of a global pandemic.

We expect that media reporting on pandemics will generate more readership for newspapers and follow similar patterns as natural disasters. In other words, we expect media reports on COVID-19 pandemic to focus on human-interest and conflict frames, instead of hard-data reports on preparedness or policies that can benefit public officials.

TIMELINE OF COVID-19 IN PENNSYLVANIA

The coronavirus outbreak (COVID-19) began in Wuhan, China in December 2019. After this, the first confirmed case was confirmed in the United States on January 21, 2020. On March 6, 2020, Governor Tom Wolf declared that there were two confirmed cases of COVID-19 in Delaware and Wayne Counties. Both cases were related to travel. On March 13, Wolf reported that all Pennsylvania schools would be closed for at least 2 weeks. By March 17, there were 96 cases in the state and more than half of them were in the Philadelphia metropolitan area; with Montgomery County having the highest number. On March 18, the department of health reported the state's first confirmed COVID-19 related death, a patient at St. Luke's Fountain Hill campus in Northampton County. On March 19, Wolf ordered a statewide shutdown of all "non-life-sustaining businesses". Then, on March 28, Wolf issued a stay-at-home order for Beaver, Butler, Westmoreland, Centre, and Washington Counties. On April 1, Governor Wolf extended the stay-at-home order to the entire state until April 30, and eventually May 8. On May 1, Governor Wolf introduced his plan for reopening Pennsylvania that includes red, yellow, and green phases. The red phase has the strictest restrictions with only life-sustaining businesses to remain open. The yellow phase introduces the opening of in-person retailers and some in-person businesses. The green phase is the opening of all businesses and organizations, as long as they comply with CDC guidelines (17). On May 8, 24 counties went into the yellow phase, mostly located in rural northern Pennsylvania. On May 22, 13 counties in western Pennsylvania moved from the red to the yellow phase of reopening. As of May 22, 18 counties remained in the red phase of reopening and are mostly located in the eastern part of the state.

In Governor Wolf's announcement of plans for the state, he has regularly discussed CDC guidelines and how prevention of the spread of the virus is vital for the community of Pennsylvania. The impact of these directives needs further investigation since there have been multiple reports showing that some businesses remained open, defying the Governor's orders (14). Similarly, some individuals in the state continued to avoid social distancing (14) and did not recognize the importance of preventive measures. An example of this was a 35-year-old woman in Luzerne County who was arrested for deliberately coughing and spitting on food at a supermarket. She made verbal threats about being infected with COVID-19 and was charged with two counts of terrorism and two other felonies. The supermarket had to dispose of $35,000 worth of merchandise (12). While this is an extreme example, it illustrates some of the reactions in Pennsylvania. Many citizens did not desire to follow the CDC guidelines.

RESEARCH METHODS

Data Collection and Sample

This study examines news coverage of the COVID-19 outbreak in the state of Pennsylvania through content

analysis. Two major regional newspapers in Pennsylvania were considered—The Philadelphia Inquirer, and The Pittsburgh Gazette. Both the newspapers are well established with The Philadelphia Inquirer ranking #1 with 227,245 copies in circulation, and the Pittsburgh Gazette ranking #3 with 140,987 copies in circulation within Pennsylvania (21). In addition to the two major newspapers, we considered three major suburban newspaper outlets. Among suburban outlets, we considered the Delco Times, the Intelligencer, and the Mainline Media News.

The news articles search was restricted to the first one and a half months after the first COVID-19 case was reported in Pennsylvania on March 6. We selected relevant articles through LexisNexis Academic, using the keywords "COVID-19" and "Coronavirus" and by filtering the search for articles published in the targeted newspapers. The Lexis Nexis Academic platform was useful in collecting articles from the Philadelphia Inquirer, and the Pittsburgh Gazette. However, it was not sufficient for collecting suburban news articles. For suburban news, we accessed each of their websites and searched for COVID-19 related articles published from March 1- April 10.

The resulting number of news articles was 4,899. The exact proportion of articles that have been collected for this time-period in comparison to the total number of articles published is unknown since search results were limited to only those news articles that have been electronically archived. There is also no record of articles that may have been overlooked during this process.

Coding Categories and Measures

The coding instrument to analyze collected news articles was developed based on Semetko and Valkenburg (30). The frames used to develop the coding instrument are-- "conflict frame" that emphasizes the conflict between multiple individuals, groups or institutions; "economic impact frame" referring to the economic consequences of an event, problem or issue; "morality frame," which puts the event or issue in the context of religious tenets or moral prescriptions; and "human interest frame" meaning attempting to personalize, dramatize or emotionalize the news (30). In addition to Semetko and Valkenburg frames (30), an additional "protective action frame" was also added to capture the information of protective actions being provided by the media.

Each frame was sub-divided into 4 to 7 questions that were aimed at capturing different aspects of respective frames. For example, the "human interest" frame is divided into questions that range from "Does the story mention the count of infected individuals/

lives lost" to "Does the story go into private/personal lives of actors." Similarly, the "protective action frame" frame contains questions that asks, "Does the story talk about personal protective actions to take" to "Does the story talk about institutional/business- planning/ preparedness for pandemics?" A summary of the framing options is provided in Table 1.

Table 1: Summary of Framing Options	
GENERAL INFORMATION	Media outlet
	Date of article
	Length of story (word count)
	Headline
	Places mentioned
	Tone of story
	Sources
CONFLICT FRAME	Disagreement between actors
	Attribution of responsibility to government agencies
	Attribution of responsibility to specific individuals or groups
	Attribution of responsibility to corporations
URGENCY FRAME	Urgent attention to a specific problem
	Urgent attention to the pandemic in general
ECONOMIC FRAME	Financial losses and gains
	Shutdown of businesses
	Shutdown of institutions (church/public institutions)
	Need of economic resources
MORALITY FRAME	Reference to God or other religious tenets
HUMAN INTEREST FRAME	Count of infected individuals/lives lost
	Private or personal lives of individuals
	Individuals and groups are affected
	Emotional/psychological impacts
	Personal stories of responders
PROTECTIVE ACTION FRAME	Recommendations for personal protective actions
	Public education
	Protection by health agencies/workers
	Preparedness capabilities
	Lack of preparedness
	Planning and preparedness of institutions and businesses

For the purpose of submitting our paper to this journal, we decided to present our findings on analysis of only a part of collected newspaper articles. This study thus serves as a preliminary analysis of the data collected. We analyzed 35 articles published by The Philadelphia Inquirer and suburban newspapers around Philadelphia (namely, the Delco Times) over the first two days (March 6 and 7) since the first case was declared in Pennsylvania. On the coding instrument, each coder had to answer "yes" (1) or no (0) to each question. We coded the articles between May 11-16.

FINDINGS

The newspaper articles coded for this research paper have an average word count of 791. 60% of articles reported in a neutral tone and mostly focused on Philadelphia and the surrounding metropolitan area. Frequently when other areas were mentioned, they would be referred in relation to Philadelphia and Pennsylvania as a whole. Some of the major sources used were the Center for Disease Control guidelines and three out of five of the suburban news sites cited the Montgomery County Board of Commissioners.

Table 2: Frequency Distribution of Predominant News Frames

	Urgency	Human-Interest	Protective Action
No Use (%)	28.6	28.6	5.7
Use			
One Item (%)	40	31.4	22.9
Two Items (%)	31.4	20.0	11.4
Three Items (%)	-	2.9	20.0
Four Items (%)	-	14.3	25.7
Five Items (%)	-	2.9	14.3

What frames were utilized most in reporting?

Content analysis of newspaper articles published on COVID-19 in the Philadelphia area on March 6 and 7 suggest that the predominant frames reported in the articles are-- (i) human interest, (ii) urgency, and (iii) protective action. The frequency distribution of each of the three predominant frames is summarized in Table 2.

The Table suggests multiple aspects of the human-interest frame and the protective action frame were covered in depth by articles. 20% of the articles mentioned three items of protective action and 25.7% of the articles mentioned four items. Frequent handwashing, limiting unnecessary contact with others, and stocking up on groceries were all mentioned in these articles. Within the human-interest frame, articles reflected how the pandemic and social isolation might affect certain groups within society. Children, the elderly, and college students living on campus were referenced as being in unique situations that merit discussion. 40% of the sampled articles referenced the urgency of the situation. These articles encouraged their readers to take immediate action. Some discussed developing a vaccine, an inevitable nation-wide shutdown, quarantine, and finding a cure as soon as possible.

From the human-interest frame, we found that 51.4% of the coded articles mentioned human interest. 31.4% of articles coded reported at least 1 item and 20.0% reported at least 2 items. Many articles emphasized how specific groups or individuals were affected by the virus. One article titled "*As COVID-19 lands in Philly area, some people are keeping their hands to themselves. Others, not so much,*" examined the effects of social distancing on the elderly and normal aspects of life like going to the grocery store or greeting friends on the street. "*I'm from the South, and we're big huggers. You're seeing a different atmosphere*" (14). Further, the article mentioned how locals were questioning how to live life from now on, "*all the places they perhaps no longer want to put their fingers, such as on a door handle, on the flat black rail of an escalator, or into the holes of a bowling ball*" (14). In these articles, there is a focus on what would happen to certain individuals during a pandemic, which led to uncertainty for these people. This is also shown in "*How*

do you quarantine on a college campus?" and the, "*If a major outbreak happens on a college campus, Beck guessed that at many institutions, resources would come up short*" (8). The article sympathizes with students attending colleges or universities, "*Colleges may have to rely on outside partners - that apartment building or hotel they've contracted with - and students' families to house them, assuming that they are not so ill that they need to stay in a hospital*" (8). This concern and compassion for college students and the elderly shows how news reporting represented human interest during the outbreak.

Multiple *Philadelphia Inquirer* articles noted the challenges of parenting and educating children through this no contact time. One article noted "*Touching and being touched is fundamental*" and discussed the social changes that the coronavirus has created (14). One article published on March 7, 2020, titled "*How to talk to your children about coronavirus*" instructed parents to help mentally prepare their children for changes to school and life for a while, and offered advice on how to communicate the situation to children. Similarly, at least six articles focused on the cancellation of traditional Philadelphia sports staples like meet the team events, autograph sessions, and changes to the religious and educational norm. A phrase repeatedly used was "*out of an abundance of caution*" suggesting that while the situation required adaptation, there was no need for alarm and overall reinforced a neutral and factual tone for these articles.

When examining the urgency frame, we found that 71.4% of the coded articles mentioned urgency and 54.3% of the surveyed articles suggested that the problem or issue requires urgent attention. Both the *Philadelphia Inquirer* and the *Delco Times* had multiple articles with syntax that hinted that action is required in relation to prevention and peoples' reaction to the virus. In one *Delco Times* article it was said that "*scaring*" people is necessary in order to get them to take action, "Vitali said, "*If scaring them causes them to be more cautious and safer, so be it*" (5). In another article by the *Philadelphia Inquirer*, the author states that Wolf declared an "*emergency disaster declaration*" to provide increased support for state agencies involved in responding to the virus (29). The word "*urgency*" or a phrase that implied urgency was mentioned in twenty-five articles. Of these articles, 40% reported urgency at least once and 31.4% reported urgency at least twice.

For the protective action frame, we found that 94.3% of articles mentioned at least one form of protective action to be taken against the virus. Many articles discussed hygiene tips and prevention techniques aimed at a specific demographic. For example, there were articles titled *How can Philadelphia's senior communities protect themselves from the coronavirus?* and *How do you*

quarantine on a college campus? In an article posted on March 6 from the *Philadelphia Inquirer,* information was provided on "*symptoms to watch for*" and to "*contact your healthcare provider*" should you become sick with any of those warning signs (10). When schools were shut down for deep cleaning due to the virus, parents responded in the *Delco Times* article that "*it's best to take as many precautions as possible*" (16). This suggested that protective action is a priority. On March 7, people were asked how they were protecting themselves from contracting the virus and one man said, "*I'm just being more cognizant of people around me and of my hands -- washing them and 100% keeping them away from my face*" (9). The fact that the media decided to highlight protective action against the virus is something that contradicts existing trends on disaster reporting and should be noted.

When examining the frequency descriptive of the non-predominant frames in our coding instrument, we find that 28.6% of the coded articles used at least 1 item in conflict frame, 57.1% of coded articles mentioned at least 1 item in the economic frame, and none of the articles reported on the morality frame. We suspect that this is due to the fact that we have coded news articles reported over the initial stages of the pandemic in Pennsylvania. Expanding the time frame of the coded articles will possibly yield higher reporting on the non-predominant frames in this paper.

What can we learn from news coverage during the COVID-19 outbreak in Pennsylvania?

The results align with our expectation that media articles emphasize the "human-interest" frame when reporting an extreme event. While usage of personal stories and putting a face to the unfolding event help in humanizing an event, such stories may have very little impact on concrete preparedness actions. Policymakers and public health officials might not be able to align their disaster-related goals with these stories.

However, emphasizing on the human-interest frame is also expected to have a positive impact. It provides empathy for those who are struggling due to the virus such as the elderly, the unemployed, healthcare workers, people who were hospitalized for COVID-19, etc. The focus on a human-interest story can bring awareness to the pandemic and encourage the public to slow the spread of the virus.

Similarly, when the media promotes protective action, it can have a positive effect. Large-scale media campaigns have higher population exposure and can increase overall population response to campaigns (35). For example, now the media motivates the population to wear masks during the pandemic because it can prevent the spread of the virus (23). When people are more compliant towards wearing masks and social distancing, it is easier for the governor of that state to implement a state mandate with masks. Likewise, when a company announces their support for the suggestion to wear masks, like Target (23), it draws attention to the importance of the issue.

The predominance of the protective action frame in analyzed articles does not align with our initial expectation when starting this research. The literature review conducted for this study has suggested that media reports on extreme events tend to selectively focus on news-worthy events on human interest and conflict frames, instead of reporting on concrete policy measures and preparedness actions. However, the articles analyzed for this study show predominance of the protective action frame. It is possible that with the outbreak of the coronavirus, our communities have faced an unprecedented situation where instead of being viewed as helpless disaster victims, private citizens have actively shared accountability in limiting the spread of the virus through personal protective measures. This resulted in a massive search of information regarding what kinds of protective actions to take, including personal hygiene measures and social distancing. The high demand for information regarding protective actions might have resulted in higher reporting of this frame by newspapers.

In the context of the interest of policymakers, this finding is optimistic. Emphasis on protective action frame helps responders and policy makers in circulating public health news on protective action and ensuring that people follow these. This provides awareness for the public. When the media encourages actions such as wearing masks, washing hands, and social distancing; this can possibly lead to more individuals following CDC guidelines and help to reduce the spread of the virus. Therefore, less people would potentially become ill with COVID-19. Hopefully, preventing the spread will lead to a smaller amount of COVID-19 related deaths and eventually the return to "normal life" before the virus (23).

Finally, we did not find evidence supporting a statistically significant difference in reporting among regional and suburban newspapers regarding the tone of articles, the human interest, urgency, and protective action frames being discussed. The reason is a limited sample size and skewed distribution of articles being considered from the *Philadelphia Inquirer* vs. suburban news.

CONCLUSION

In conclusion, our findings showed how human

interest, urgency, and protective action frames were significant factors in news reporting in Pennsylvania after the initial outbreak of COVID-19. Our analysis is based on articles published in the *Philadelphia Inquirer* and suburban newspapers in the Philadelphia area. We used framing theory to develop a coding instrument to analyze collected articles.

The contribution of this study as an addition to the existing literature on crisis reporting is two-fold. First, we address the gap in literature on pandemic reporting. Second, we utilize framing theory and systematically analyze news articles by developing a coding instrument. This methodology can be replicated in other similar examinations of crisis reporting.

The practical implication of this study involves informing future pandemic reporting. The protective action framework has been useful because it promotes preparedness and hygiene tips during the outbreak of coronavirus. This has hopefully educated the public on how to slow the spread of the virus. Additionally, the usage of neutral tone in reporting during a pandemic prevents panic in a time of uncertainty. The media encouraging people to remain calm is important. Finally, the human-interest frame, even though it does not exclusively inform us about preparedness-- is beneficial because it focuses on the personal lives of those affected during the pandemic. This leads to sympathy and understanding of others, which may encourage people to act proactively for the health of their loved ones. All these factors improve news reporting and leave a powerful long-lasting effect on their audiences.

However, this study shows only a limited picture of COVID-19 reporting in Pennsylvania. We coded and analyzed a limited number of articles published during the start of the outbreak in the state. These constraints limit the generalization of our findings. Additional information from a larger time span and a greater variety of news sources across Pennsylvania will strengthen our results. The next phase of this research will examine newspaper reports from a wider timeframe and consider newspapers circulated beyond the Philadelphia metropolitan area.

An additional methodological limitation of this study is the test of inter-coder reliability. Responsibility for coding the 35 newspaper articles was equally divided among 2 coders. The coders were trained in analyzing content based on the developed frames. However, the coding process can be subject to a certain degree of human error and bias. To minimize human errors and improve reliability of our findings, expansion of this study will include two coders individually analyzing all the articles and a subsequent statistical inter-coder reliability test can be conducted to test and improve reliability of the findings.

The next phase of this research will examine newspaper reports from a wider timeframe and consider newspapers circulated beyond the Philadelphia metropolitan area. Additional data on COVID-19 response by local governments in Pennsylvania will also be collected. This serves towards the overall potential of this research in examining the impact of newspaper reporting of the pandemic on response actions taken by communities across the state.

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