

A Challenging Empirical Question: What are the Effects of Media On Psychogenic Illness during a Community Crisis?

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Abstract

Psychogenic illnesses during disaster can cripple emergency healthcare services. Almost all research into this phenomenon has been retrospective and observational, and much of it suggests that media coverage can amplify psychogenic outbreaks. But there is little empirical evidence that this is true or that, conversely, media reports can mitigate psychogenic symptoms. In their work experimentally inducing psychogenic illness, the authors became sharply aware that it is difficult to experimentally mimic real-time media coverage. Yet clarifying media's effects on psychogenic illness is important if we want to prevent psychological disturbance. To meet this challenge, the authors advocate the funding and development of research protocols in advance of public emergencies, ready to be implemented in real-time. Coupled with digital media, which can track the reading and viewing behavior of millions of people, this approach can help us better understand media's impact on public health during an emergency, for better or for worse.

Keywords: Disaster; Mass media; Social medicine; Psychosomatic disorders

Psychogenic illness can emerge during unremarkable community events as well as public health disasters. When outbreaks occur, individuals experience symptoms that have no discernible physical cause but that spread as if contagious [1-4]. Even with minor events, such outbreaks can overburden health services, as medical personnel deal with symptoms and look for organic illness. Worse yet, when outbreaks occur in tandem with a disaster, whether natural or manmade, they can cripple emergency healthcare services, preventing care from being effectively delivered to those in most need. For instance, in 1995, when terrorists released sarin nerve gas in the subways of Tokyo, about 85 percent of the 5,500 people who sought care in hospitals had no actual exposure, but many exhibited symptoms [5].

Almost all research into this phenomenon has been observational and anecdotal, and much of it has suggested that media coverage can amplify psychogenic outbreaks. To allow more rigorous investigation, our laboratory has been conducting research to create an experimental analogue. We recently completed experiments to induce psychogenic illness and included media exposure as one of the conditions [6]. Although we were able to demonstrate the social contagion aspect of psychogenic illness, we found no effect due to media exposure. We are aware, however, that the media exposure we used, watching a documentary film, did not fully reflect the real-world experiences of news consumers during a public health emergency. As we wrestled with our study design, we came to realize that creating an experimental condition that mimics real-time media coverage during an emergency is a true challenge. Yet it is important to clarify media's effects on induction of stress and psychogenic illness, so we can understand and learn to mitigate significant psychological disturbance.

Many observational studies and commentaries on the consequences of media coverage during a crisis suggest that it can escalate the emotional response leading to negative psychological effects. The arrival of ambulances and news reporters at the site of a sudden illness outbreak has been said to increase the numbers of persons reporting illness, heightening anxiety and confirming the sense that something real and dangerous is occurring [7-9]. Some authors state flatly that newspaper and television reports spread psychogenic illness and that lack of coverage will prevent spread [10,11]. One set of authors notes: "Nearly all who write on this topic draw attention at some stage to the

role of the media, usually in unflattering terms" [8]. Yet surprising, there is little or no empirical evidence to support assertions that media reports fuel psychogenic outbreaks.

The strongest evidence of media impact comes from post-hoc observational studies of the aftermaths of the September 11th attacks in 2001 and the 1995 Oklahoma City bombing. Researchers found that heavy viewing of television reports about the terrorist attacks was associated with symptoms of distress, stress or post-traumatic stress disorder [12-18]. This link was sometimes seen only in certain groups, such as children under 10, [19] or in people who also had been personally affected, especially if they repeatedly viewed specific images, such as people falling from the World Trade Center [20]. Because they rely on retrospective correlations between news exposure and reports of symptoms, these study designs are not able to demonstrate a causal link or establish the direction of association— is media consumption the cause or the effect of an individual's psychological response?

Authors of such retrospective studies consistently observe that greater media exposure may be a marker of distress, rather than a cause. In the following statement, for instance, researchers offer three possible scenarios for the interplay of media and psychogenic symptoms. In only one of these is media a cause rather than an effect:

"The associations could be an indication that exposure via TV contributed to the development of the symptoms, that those who were already distressed by other September 11 exposures watched TV coverage as a coping mechanism, or that psychologically vulnerable persons are more likely to seek out such exposures via TV." p. 587 [14].

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Are psychologically vulnerable persons more likely to watch TV footage of disaster, over and over? The literature on the effects of personality on media choice and consumption is inconclusive. Two studies do link neuroticism to attention to media. Shim and Paul found "neuroticism was positively associated with attention to all genres assessed"-- news, soap operas, reality shows, talk shows and crime dramas [21]. Weaver found that male college students scoring high on neuroticism expressed a strong preference for "information/news television programs" over comedy or action-adventure offerings [22]. Thus, personality and personal history may interact with the impact of crisis media.

Empirical evidence that news reports fuel stress may be lacking. But, what about the opposite hypothesis? It is often said that in crisis situations the news media can play a positive role by conveying accurate information, outlining steps people can take to protect themselves, and relaying realistic messages of reassurance [23,24]. During a crisis, the media serve as a conduit for official and expert statements. Teaching public health officials how to convey such messages directly, through their own communication networks, and indirectly, through the news media, is central to the practice of risk communication as embraced and taught by the Centers for Disease Control and Prevention, among others [25-27]. Yet, just as we have little empirical evidence that news media reports cause anxiety, stress or psychogenic symptoms, we also do not know to what extent, if any, media reports can mitigate these harmful reactions. Such extremely broad questions about the impact of media should serve as a gateway to more focused, useful questions. We need to learn which characteristics of messages in differing formats, including the increasingly dominant arena of web-based media, help to determine their impact on various kinds of individuals.

One reason empirical evidence is lacking is that it's hard to gather. Once a crisis is underway, it is extremely difficult to implement prospective data collection. Researchers can more readily conduct retrospective correlation studies, but they cannot determine causality. One solution is to provide research funding to support the development of research protocols in advance of public emergencies, ready to be implemented in real-time to test hypotheses like the impact of media and public health messaging on individuals' stress reactions during an actual crisis. This would allow researchers to study the impact of media coverage in its full complexity, looking not only at the verbal, visual and aural content of media messages, but at their volume and repetitiveness, within the context of an unfolding crisis.

Understanding the role of news reports in stoking or preventing stress, anxiety and psychogenic illness is important as we seek ways in which society can respond most effectively to crises. And now may be the perfect time for deeper investigation. The rise of websites, blogs, podcasting, viral videos, and social media has profoundly changed the way people around the world get their news, with more change on the way. For instance, in an analysis comparing the coverage of radiation issues in the Three Mile Island, Chernobyl and Fukushima nuclear accidents, Friedman attributes the differences largely to the existence of new social media, which allowed non-journalists to share information about Fukushima and to help inform mainstream coverage. As a result, she concludes that coverage of radiation information was superior in the Fukushima case, even if television coverage had weaknesses [28].

The new digital media present an open canvas for study and analysis of the effects of coverage on stress, anxiety and psychogenic symptoms. At the same time, they lend themselves to new metrics, new means of analysis. In many cases, readers' and viewers' behavior can be tracked click by click and second by second, so researchers can tell what people actually read, hear, view and respond, rather than what they recollect

they did. Moreover, through digital media, researchers can observe the behavior of not a few dozen or a few hundred research subjects, but of millions of people.

These tools already are bearing fruit in some research fields. A study published recently in *Science*, for instance, tracked daily and seasonal variations in mood by analyzing 509 million Twitter messages posted by about 2.4 million individuals over two years [29]. "Data from increasingly popular online social media allow social scientists to study individual behavior in real time in a way that is both fine-grained and massively global in scale," the authors write. With tools such as these, and advance funding and planning of research protocols, we can make progress toward understanding the impact that news coverage has on public health during an emergency, for better or for worse.

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