

## The Role of the Media and Media Hypes in the Aftermath of Disasters

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Abbreviation: MPI, mass psychogenic illness.

### INTRODUCTION

It is hardly a surprise that disasters occur more often now than in the past: the world is getting more crowded, air traffic is busier, terrorists are operating worldwide, and the world is much more dependent on complex, but vulnerable technological systems. In the database of the Center for Research on the Epidemiology of Disasters, an increase was found in the number of disasters worldwide. During the decade 1970–1979, 1,230 disasters were registered; in the 1980s, this figure was 2,856; and, in the 1990s, 4,790 disasters were listed. For the years 2000–2003, more than 3,000 disasters were reported (1). Disasters can be defined as acute, collectively experienced traumatic events with a sudden onset, and they can be both natural (e.g., hurricanes, floods, earthquakes) and man-made (e.g., plane crashes, industrial accidents, terrorist attacks) (2).

A growing body of literature suggests that disasters can have both short-term and long-term health consequences for the victims involved, such as posttraumatic stress disorder, depression, anxiety, or substance abuse (2, 3). Increased self-reports of nonspecific psychological distress and medically unexplained physical symptoms (e.g., fatigue, headache, difficulty concentrating, joint/muscle pain) have been noted following disasters as well, for instance, after the Three Mile Island nuclear accident in Pennsylvania (4), the Buffalo Creek dam disaster in West Virginia (5), and the Amsterdam air disaster in the Netherlands (6, 7). Similar symptoms were also reported by veterans after their involvement in traumatic military situations, such as the first Gulf War (8).

These health consequences after disasters cannot be studied without focusing on the role of the mass media. In modern society, the significance of the media in everyday life has increased dramatically, turning the world into a global village. On September 11, 2001, people all over the world watched the dramatic images of the planes crashing into the

World Trade Center; they saw the gigantic smoke clouds, the panic in the city, the people jumping from the buildings, and finally the collapse of the towers. “Nine eleven” redefined the worries of most people in the Western world. In post-modern society, coined by sociologists the “risk society,” people feel threatened by all kinds of invisible risks that exist only in terms of knowledge (9), which means that all depends on the social construction of that risk. In that respect, the social definition of a specific risk can be manipulated, amplified, magnified, or minimized. Especially when key events such as “nine eleven” launch new risk issues and uncertainty reigns, the public has to rely on the messages communicated to them by the media. But what do we actually know about the effects of these media messages on the definition of risks, health perception, and personal well-being?

To answer this question, we searched three databases and, in this paper, review the current literature on the role of the media in the context of disasters and their aftermath. In addition, we explore theoretical frameworks on the risk amplification process that takes place after disasters and the way in which so-called media hypes frame new risk issues. In the last part of this paper, we present the case of a 1992 plane crash that occurred in Amsterdam (the “Bijlmermeer plane crash”), as an example of how media hypes can trigger a process years later, in which a growing number of people attributed their health problems to the disaster.

### MEDIA AND HEALTH AFTER DISASTERS: A LITERATURE SEARCH

While we were performing an exploratory study of the health consequences of the Bijlmermeer plane crash, we worked in a “glass house”; at the same time, a parliamentary inquiry committee heard from the authorities and researchers involved under oath (C. Y. was one of them) about

potential causes and consequences of the crash (10). A lot of media attention was paid to this parliamentary inquiry. A researcher is not used to presenting results at press conferences, being interviewed on television in prime time, and seeing his or her picture in the newspapers. Media attention is out of (your own) control for several weeks; you are in the middle of a media hype. Afterwards, you wonder what this media attention meant for the survivors who were suffering from their health problems and who were looking for recognition, and what it meant for their caregivers (11). Other researchers elsewhere in the world must have experienced the same struggle, and other victims must have had the same feeling of being thrown from pile to pillar.

In our quest for similar experiences, we conducted literature searches of three databases—PubMed (National Library of Medicine, Bethesda, Maryland), PsychInfo (American Psychological Association, Washington, DC), and PILOTS (National Center for Post-Traumatic Stress Disorder, White River Junction, Vermont)—representing, respectively, medical, psychological/psychiatric, and “trauma” literature. The keywords we used were “disaster,” “media” (or “television,” “radio,” or “journalist”), and “health” (or “medically unexplained physical symptoms,” “somatization,” “somatoform disorders,” or “hysteria”). Finally, we conducted a second, separate search (only in PubMed) on “mass psychogenic illness (MPI)” because it is known that the media may play a decisive role in this phenomenon. The timeframe we used was 1990 up to and including the first months of 2004, and we did not use any limitations on the language of the article. We included only those articles

containing an abstract, and we excluded book chapters. With respect to the search on the relation between disasters and the media, we found 132 different articles: 85 from using PubMed, 24 more from PsychInfo, and 23 from PILOTS. The second search on MPI resulted in 32 articles. All of these articles were accessed and read by two of the authors (C. Y. and A. D.). The studies were checked in terms of three criteria: 1) Is the disaster described? 2) Is the influence of the media measured? and 3) Are health outcomes described and/or measured? After this check, 122 articles on disasters were excluded, especially because of criterion 2. In the other search on MPI, 28 articles were excluded. Thus, 10 articles on disasters (table 1) and four on MPI (table 2) remained; the majority of the studies did not use a controlled design. Therefore, a systematic review or meta-analysis was not feasible.

In the majority of the studies we initially found, attention was paid to the media only in the discussion section in an attempt to differentiate the results, especially regarding the potential influence of the media on health outcomes after disasters. In most studies, the media are portrayed negatively: as writing sensation-seeking, enlarging anecdotic stories, especially on who is to blame; being in the way of rescue workers; repeating the same images (e.g., the planes hitting the World Trade Center’s Twin Towers) over and over again; separating physical and mental health consequences of the disaster (with no attention paid to the latter); and creating new syndromes (e.g., “Manhattan cough” and “World Trade Center syndrome” in firefighters, while others who live or work south of Canal Street in New York City

TABLE 1. Included studies on the role of the media in the aftermath of disasters

Study (year)	Disaster	Media and focus	Reference no.
Ahern et al. (2004)	9-11 WTC* terrorist attacks	TV: how many times respondents had seen images of the attacks in the 7 days after the disaster	21
Ahern et al. (2002)	9-11 WTC terrorist attacks	TV: how many times respondents had seen images of the attacks in the 7 days after the disaster	17
Gortner and Pennebaker (2003)	Texas A&M University bonfire tragedy	Newspapers: all disaster-related articles from two student newspapers, until 14 weeks after the disaster	23
Pfefferbaum et al. (2002)	Oklahoma City bombing	TV: amount of bombing-related television viewing in the aftermath	15
Pfefferbaum et al. (2001)	Oklahoma City bombing	TV: amount of bombing-related television viewing in the aftermath	14
Pfefferbaum et al. (2000)	Oklahoma City bombing	TV/radio/print media: proportion of TV/radio time or print media reading devoted to bomb-related coverage	16
Schlenger et al. (2002)	9-11 WTC terrorist attacks	TV: amount of time spent viewing disaster-related TV and whether people watched specific images (on 9-11 and the first days afterwards)	19
Schuster et al. (2001)	9-11 WTC terrorist attacks	TV: amount of time respondents watched TV coverage of the 9-11 attacks	18
Silver et al. (2002)	9-11 WTC terrorist attacks	TV: hours per day spent watching TV coverage of the attacks	20
Pantin et al. (2003)	9-11 WTC terrorist attacks	TV: amount of television exposure	22

\* WTC, World Trade Center (New York City).

**TABLE 2. Included studies on mass psychogenic illness and the media**

Study (year)	Trigger event	Precipitating media role	Reference no.
Gallay et al. (2002)	Supposedly toxic Coca-Cola	Extensive nationwide radio and television coverage	30
Jones et al. (2000)	Smell of chemical odor at school	Intense and enduring media attention	29
Kharabsheh et al. (2001)	Vaccinations	Media amplification of the incident	28
Radford and Bartholomew (2001)	Simultaneous watching of a specific episode of Pokémon on TV	Increased number of children reporting symptoms after extensive media attention	31

and/or in New Jersey reported similar symptoms, and authorities continuously reported that air quality monitoring indicated that there was no health threat).

Brewin fulminated 10 years ago: “The ironic thing about the seemingly endless coverage of the 1986 Chernobyl accident—and the relatively harmless, because much diluted, radiation that then blew around the world—is that, with few exceptions, the media have done more injury to the truth than was ever done by cover-up or whitewash. Television is the worst offender because the visual impact is unforgettable and any reasonable sense of proportion goes out of the window” (12, p. 208). According to Brewin, the media wrongly described Chernobyl as a nuclear explosion; he argued that it was a steam explosion and not a nuclear one. In the latter case, there would have been more than the 31 casualties, and more radiation-related health effects would have been expected. To date, the only radiation-related effect of the Chernobyl accident is an increased risk of childhood thyroid cancer (13).

In our search of the literature, we found the following results.

### The 1995 Oklahoma City bombing

In the case of the Oklahoma City bombing, the influence of the media was of particular concern (as it was later in New York) because publicity magnifies the effect of terrorist actions. After the bombing, there was on-site coverage by the media, and, for days, the survivors watched television because it was the major source of information. However, as Pfefferbaum et al. concluded, “fear, arousal and hypervigilance may lead to continued information seeking to assuage continuing concerns about safety . . . , but television viewing while in an aroused state has potential psychological ramifications” (14, p. 207). In their study, Pfefferbaum et al. (14) concluded that television viewing after the bombing made a small contribution to subsequent post-traumatic stress symptomatology in children (from middle schools) or that increased television viewing may be a sign of current distress. Another Pfefferbaum et al. study (15) on the bombing found that peritraumatic response and television exposure accounted for 25 percent of the total variance in a measure of posttraumatic stress symptomatology (15). Among children geographically distant from the explosion,

media exposure was also a significant predictor of symptomatology (16).

### The September 11, 2001, terrorist attacks

Several authors have hypothesized that media presentation is the most commonly reported trigger of memory recall. In the aftermath of the September 11, 2001, attacks, four studies demonstrated associations between viewing television coverage of the attacks and (self-reported) post-traumatic stress symptomatology (17–20). Ahern et al. (21) found a 2.3 times greater odds of probable posttraumatic stress disorder in the group that watched television most. In a previous study, Ahern et al. (17) detected that respondents directly exposed to the disaster showed a stronger association of television viewing with posttraumatic stress disorder and depression (especially after repeatedly viewing the images of people falling or jumping from the towers). The association between media exposure and symptomatology was established in another study as well (22).

### The 1999 Texas A&M University bonfire tragedy

In this incident, 12 college students died when 5,000 logs unexpectedly collapsed. Gortner and Pennebaker (23) studied the bonfire-related articles in some regional newspapers, suggesting a direct relation between disaster-related reports and the communities’ collective health. When the quantity of bonfire-related articles decreased after 2 weeks, the number of visits to the local health center increased dramatically.

### MPI

In the literature on the association between disaster, health, and the media, mass psychogenic (or sociogenic) illness (MPI) is often mentioned. Wessely (24) and Bartholomew and Wessely (25) distinguish between “mass anxiety hysteria” (e.g., acute anxiety in female schoolchildren, often after smelling an odor) and “mass motor hysteria” (which occurs gradually in a group of already tense people who experience abnormal motor behavior). Wessely is still the expert on this phenomenon; in an editorial on responding to MPI episodes, he writes: “But we rarely, if ever, hear about incidents handled sensitively, with no long-term

repercussions involving ill and embittered people and ambitious investigative reporters. Should we investigate at all? Does the deployment of large numbers of emergency and public health specialists merely add fuel to the fire, convincing people that there really is something serious going on?" (26, p. 130).

MPI is, for instance, seen in vaccination campaigns. Incidents can quickly gather momentum and can be amplified by the media, who disseminate information rapidly, escalating the event (27). This phenomenon happened in Jordan in 1998 following tetanus and diphtheria vaccinations (28).

MPI is also regularly reported in US schools following a chemical odor, as occurred in a Tennessee high school in 1998. After a teacher smelled an odor in her classroom, she experienced nausea, headache, and dizziness. Soon afterward, 100 students and staff members went to the emergency room, and the school was evacuated. Media attention to the outbreak was intense, and the local newspaper published reports for more than a month after the school had been declared safe, still searching for toxic substances and feeding rumors of incompetence and cover-up on the part of the government (29).

In June 1999, five Belgian secondary schools were involved in one MPI incident (schools 2–5 followed 2–6 days after school 1). Coca-Cola in the first school and Coca-Cola and Fanta in the other schools were supposed to be toxic because many children reported health complaints after consuming these soft drinks. Finally, it was concluded that no toxicologic cause was present. Still, The Coca-Cola Company withdrew 15 million crates of these soft drinks across Belgium, France, and Luxembourg and temporarily closed three of its factories in Europe. Several features were believed to have enhanced contagion of the outbreak: the arrival of police and ambulances at school 1, extensive nationwide radio and television coverage, and, in a wider context, a dioxin crisis in Belgium 2 weeks earlier (30).

In 1997, hundreds of Japanese children reported various symptoms after watching an episode of the popular animated cartoon Pokémon on television. They were supposed to be hit by bright flashing lights that were shown in this episode, and, 1 hour later, about 600 children were hospitalized. In this case, one of the media itself was the "cause" of the panic; after extensive media coverage of the symptoms, the number of reported cases increased tremendously (31).

### Media coverage: positive and negative contributions

The role of the media in the aftermath of disasters always involves stress for public health officials. Terry Anzur describes the diverse perspectives of the journalist and public health officials: "To the journalist, news is about conflict. The reporter strives not only to assess the loss of lives and property, but also to determine if the damage could have been prevented and who is to blame. The television journalist also must find the pictures that tell the most compelling story, even when the images are disturbing. To the public health professional, news is about the absence of conflict. Loss of life is minimized and injured survivors receive prompt and appropriate treatment. These contracting agendas clash when TV-reporters and public health professionals are thrown

together in the midst of a disaster. The reporter is drawn to the danger and drama, while health professionals emphasize prevention, reassurance and recovery" (32, p. 197).

The role of the media is discussed not only in the context of reports on disasters and health. For instance, media coverage is seen as a risk factor for suicide (33). Media attention can also be incorporated to some degree into veterans' perspectives on their experiences during war, and it influences the stability of recall (and the quality of analysis of self-reported morbidity) (34). Furthermore, there is a strong relation between the symptomatology seen in the aftermath of disasters and medically unexplained physical symptoms in the general population. The only difference is that, after a disaster, the symptoms may be attributed to the event. When the media enlarge this supposed association, there is a risk of creating new syndromes, and "then patients troop to the doctor, ailing with the kinds of non-specific symptoms that have afflicted humankind since the dawn of time" (35, p. 115). As Engel warns, "Anecdotes from patients who feel their symptoms and concerns have been discounted by an unfeeling government clinician become grist for media and political mills. The anecdotes multiply, grow and then infect the network of concerned individuals, sensitizing them to otherwise normal bodily symptoms" (36, p. 48).

Finally, regarding media and disasters, positive news is also reported concerning disaster management, education, and information. For instance, after the terrorist bombing of the American Embassy in Nairobi, Kenya, a program of mass counseling was set up by using radio, television, and newspapers to create awareness of the psychological sequelae. "The media was extremely helpful in promoting activities of this program" (37, p. 159). When describing media influences after traumatic events, Lebigot (38) concluded that media played a big part in achieving legitimate demands concerning indemnification, in taking account of the psychological aftereffects, and, indirectly, in setting up a more accurate care system. Furthermore, Alexander stated that "the media must be embraced by the authorities as allies because, particularly in the early stages after a terrorist incident, they can play a helpful role by broadcasting to an anxious population accurate information" (39, p. 493).

### MEDIA HYPES AND RISK AMPLIFICATION

The media can operate in different modes: media can follow, but they can also lead (40). They can report ongoing events, disseminating (official) information to the public. But they can also play a leading role in the social construction of the problem after a disaster, for instance, by creating a news wave based on magnification of one specific perspective. Operating in this mode, the media can have a huge impact on the way that a disaster and the risk issues involved are defined and perceived by the public as well as the authorities; nowadays, this is why the key concepts in this area of media research are *social amplification of risk framework* (41), *framing* (42), and *media hype* (43). Although these concepts refer to independent phenomena, they are described here in their interrelated context.

## Social amplification of risk framework

This concept tries to explain why hazards and events associated with relatively low statistical risks (such as Creutzfeldt-Jakob disease linked to bovine spongiform encephalopathy) can become the center of social and political controversy (risk amplification) while other, potentially more serious dangers receive comparatively little attention (risk attenuation). Risk amplification refers to the chain of events in which a specific risk is magnified, in turn causing all kinds of secondary social, political, and economic consequences (44). The social amplification of risk framework is based on the metaphor of amplification: signals are received, interpreted, amplified, and passed on by different social actors. The media belong to the most important “stations” of amplification by selecting and framing risk messages and transmitting them to the public (45).

## Framing

After a disaster or a risk event occurs, a variety of social actors, including the media, are involved in a struggle to define what happened and why, and what can be expected in the future. Their goal is to *frame* the problem: to propagate a specific problem definition, causal interpretation, moral evaluation, and problem-solving recommendations (46). The media are in a position to play not only an *agenda-setting* (47) but also a *frame-setting* (48) role. In the news coverage, separate events are integrated into broader narrative structures, which are anchored by metaphors and images. News can be structured by a balanced frame, in which the disaster-related risks are put into a useful context, but a dramatized, simplified, one-sided frame is also possible (49). Whether or not the media act as *frame setters* depends on their position in the amplification process; sometimes the media follow the social actors or the government, but at other moments they “lead the dance” by creating huge news waves, the so-called media hypes (43, 50).

## Media hype

During a media hype, news coverage seems to lead a life of its own, pushed forward mainly by self-reinforcing processes within the news production itself. Media hypes are triggered by unusual or shocking events (so-called key events), which are framed in such a way that the media shift into a higher gear, hunting for “newer” news on the topic (50). A news wave is created by these intensive news-making activities of the media and are then reinforced again and again by extensive coverage of the social actors’ reactions, responding to the massive media attention to a topic. Once a topic gains a certain level of attention in the media, it attracts more attention, and, because it attracts more attention, it becomes more newsworthy (51). This self-referential system creates positive feedback loops, expanding the news wave. During the hype, the media will generate more news on the topic by reporting comparable incidents, by reinterpreting incidents in the past, by digging into backgrounds, by (morally or ideologically) evaluating events

and performances, and by paying attention to society’s reactions triggered by the previous news wave (52).

During a media hype, a specific frame structures news gathering and news making. Reporters are looking for confirmation and tend to focus on all events and statements that provide it (53). This selective perception and selective reporting reinforces the original frame and seems to prove its tenability (54). Contradicting facts are reported, but they do not structure the news-making process and the pursuance of “newer” news, which is why media hypes can push forward the process of risk amplification and thereby elicit new developments such as attributing health complaints to one common cause. This was the focus of our research on the role of the media during the long aftermath of the Bijlmermeer plane disaster in Amsterdam, during which the number of people claiming to have developed health problems as a consequence of the disaster grew from a few hundred to more than 6,000.

## THE BIJLMERMEER PLANE CRASH: IMPACT OF MEDIA HYPES ON HEALTH PERCEPTION

On the evening of October 4, 1992, an El Al Boeing 747 cargo jet crashed into two apartment buildings in a densely populated part of Amsterdam, the “Bijlmermeer,” killing 39 residents and the four crew members. Very few persons suffered immediate physical injuries, except for some with burns and fractures. A media campaign was launched to inform people and caregivers about possible psychological aftereffects; the slogan “a normal reaction to an abnormal event” was used. Initially, the health effects were typical stress reactions, and several hundred adults and children received some form of trauma intervention. Despite the fact that the cause was established quickly (bad locking pins caused two engines to break away), the disaster turned out to be a fruitful breeding ground for endless speculation, rumors, and conspiracy theories (10). There were many unsolved questions about the plane’s cargo, about the involvement of secret intelligence agencies, and about the disappearance of the depleted uranium used as a counterweight in the tail of the plane. The chaotic and often contradictory actions by the government fueled this process, in which the media were challenged to solve the many so-called Bijlmermeer mysteries.

Analysis of media coverage of the Bijlmermeer crash undertaken in 1998 and 1999 showed that media hypes developed each time new pieces of information were revealed that seemed to prove the link between the disaster and the health complaints (43). In 1998, two media hypes strongly reinforced a specific frame stating that “there must be a cover-up about an unknown toxic agent causing all health symptoms” (43, p. 217). The first one in April 1998 was triggered by publication of a controversial study that claimed to have found traces of uranium in the blood and feces of rescue workers. A newspaper scoop ignited a second media hype in September 1998, revealing that the Boeing cargo jet carried components of the nerve gas sarin onboard. Although in itself harmless, the presence of these components was interpreted as confirmation of the cover-up and the

link between the explosion and the health symptoms. During the parliamentary inquiry in February 1999, another media hype was triggered by the discovery of a tape seeming to prove that an air traffic controller gave in to the request of an El Al employee to keep information about the dangerous cargo confidential. Although it very quickly turned out that this conversation was misinterpreted (the wrong cargo list had been used), the media pursued the original interpretation.

During these media hypes, the same dynamic recurred in the news coverage. Although the newly revealed “facts” were quite dubious (or controversial to say the least), the media created a flow of news on the basis of the “toxic agent cover-up” frame. They would follow up on the numerous health symptoms, the feelings of betrayal among the Bijlmermeer residents and rescue workers, the other “mysteries” linked to the crash, and of course on political responsibility. The domination of the “toxic agent” frame was supported by the abundant attention some of the sources (e.g., victims, lawyers, advocacy groups) received from the media. Spokespersons from the other side (departments, experts) were forced to respond within the dominant framework, thereby unwillingly reinforcing that frame. The same applied to most of the governments’ efforts to respond; it did fan the flames of the media hype. In contrast, revelation of new facts (a negligibly small cancer risk) that contradicted the central frame did not lead to a comparable hype.

Between 1992 and 1999, the number of people claiming health problems due to the disaster increased from a few dozen to more than 6,000. At first, this group included only Bijlmermeer residents and rescue workers, but other groups joined later, such as the employees who removed the debris from the site and the people who worked in the hangar at the airport where the wreckage of the Boeing plane was stored. By 1999, even people with hardly any connection to the disaster itself, but still living in the area, reported health problems linked to the crash. The health problems of these groups were very diverse and diffuse, although in some rare cases identifiable diseases were diagnosed, such as autoimmune disorders. Most people reported symptoms such as skin rashes, respiratory problems, sleeplessness, concentration and memory problems, and (chronic) fatigue for which no physical cause was found after extensive medical investigation. Research showed that some of these health problems were linked to posttraumatic stress disorders, while most were classified as medically unexplained physical symptoms that could be found in any “normal” population, although usually in a lower frequency (6). Sometimes these general and stress-related symptoms are clustered and labeled a new “disease.” These so-called functional somatic syndromes are “characterized more by symptoms, suffering, and disability than by disease-specific, demonstrable abnormalities of structure or function” (55, p. 910). The “Bijlmermeer syndrome” meets the criteria of a functional somatic syndrome: stress-related and medically unexplained physical symptoms are clustered together and defined as being caused by a specific toxic agent.

In this long-lasting attribution process that occurred between 1992 and 1999, the media seemed to have played a decisive role by repeating media hypes based on the “cover-up/toxic agent” frame. An important indication is

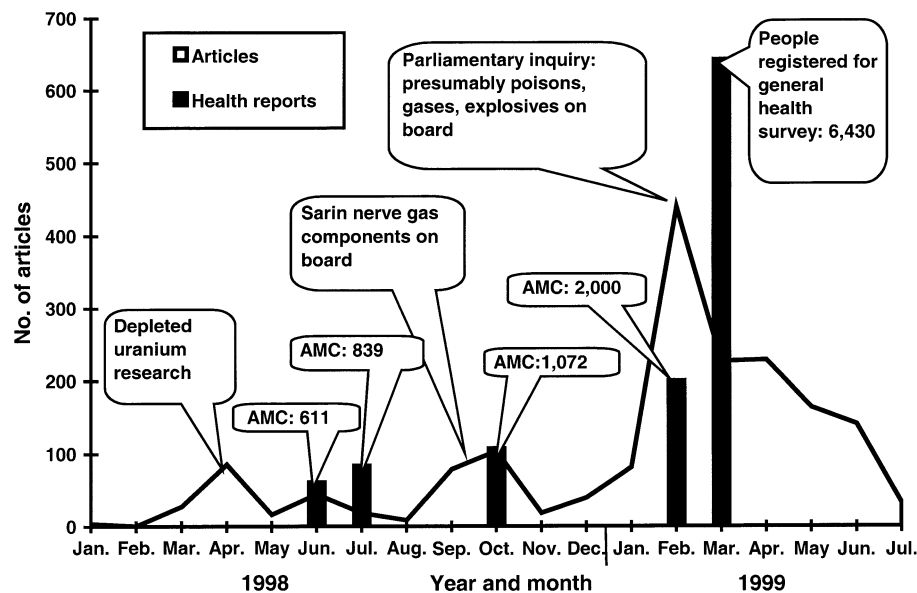
the fact that each time *after* a media hype, new groups of people reported suffering from “Bijlmermeer-related” health problems (figure 1).

After the first hype in the spring of 1998, at first 611, and later 839 people with health problems registered for the first general health survey by the Amsterdam Medical Centre (6, 7). In the slipstream of the sarin hype, another 233 persons reported health problems they attributed to the disaster. The media hype in February 1999 about the “keep secret” audiotape generated a total of 2,000, and, by the end of the parliamentary inquiry, a total of 6,430 people were registered for a medical check-up. In this case, there is reason to believe that the intensive media hypes contributed to the development of a new functional somatic syndrome. Another indication for this conclusion is the fact that, in their stories, many Bijlmermeer victims directly referred to messages in the media about the link between health problems and the disaster (10).

## CONCLUSIONS

The aim of this article was to review current knowledge about the role of the media and media hypes in the aftermath of disasters, and their health consequences. A literature search of three databases demonstrated that, since 1990, only a small number of studies have directly examined the relation between the media and health problems after disasters. The majority of the studies mentioned the media in the discussion section only. The studies we retrieved demonstrated two different roles of the media following disasters: a negative and a positive. Studies examining the influence of the media following the Oklahoma City bombing and the September 11 terrorist attacks showed that the degree of disaster-related television viewing was positively associated with posttraumatic stress disorder and depression (14–22). Studies on MPI—for example, outbreaks in which many people became sick in schools after someone smelled an odor, although no actual toxicologic agent was found—suggested that extensive media coverage can also play an important role in enhancing the spread of such outbreaks (29, 30).

Our example of the Bijlmermeer plane crash showed that media hypes can result in an increasing number of persons who attribute their health problems to the disaster. Media hypes are media-generated news waves reinforcing over and over again one specific frame while ignoring other perspectives. Such news waves can fuel fear and anxiety among people involved in one way or another in the aftermath of disasters. People tend to adopt the explanations offered by the media and integrate them into their story about their own health complaints. This tendency applies to people with endemic health problems as well as to patients with identifiable diseases. The Bijlmermeer case implies that if a sudden increase in media reports about people claiming health problems occurs directly after a highly publicized key event, there is reason to believe that it is media generated. However, if such media reports increase *without* a key event happening, then the medical problem might well be new.



**FIGURE 1.** Number of articles on the Bijlmermeer plane crash in national Dutch dailies per month and the cumulative number of people reporting disaster-related health problems to the Amsterdam Medical Centre (AMC) (health reports). “On board” refers to the cargo of the EI Al Boeing plane that crashed. Adapted with permission from Kirch W, ed. Public health in Europe: 10 years EUPHA. Heidelberg, Germany: Springer, 2004 (11).

On the other hand, a positive role of the media in the aftermath of disasters was also found: the media can have a beneficial effect on the community by informing, educating, or communicating with the people (37). For instance, it has been suggested that following terrorist attacks, the media should be embraced by the authorities as allies because they can help broadcast accurate information to an anxious population (39). It seems that when the media and public health professionals work closely together, informing and educating the public with accurate information, beneficial effects can be achieved and the well-being of the disaster community can be enhanced.

In conclusion, the media can indeed have an important impact on health problems and on how people view their health problems in the aftermath of disasters. However, only a few studies actually examined associations between the media and health problems following disasters. Therefore, more studies that explicitly examine the role of the media in the aftermath of disasters are encouraged.

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