

Medicine and the Media

Mass-Mediated Medicine

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Key words: mass media, reconstruction of reality, cultivation theory

IMAJ 2006;8:757–762

The mass media are a pervasive, powerful and popular source of information in all modern societies and can profoundly influence health-related beliefs and behaviors. Indeed, several studies have shown that the public obtains most of its health information from mass media. Moreover, mass communication research demonstrates that the media can shape our beliefs, attitudes and perceived norms, which, in turn, influence behaviors. In addition, the media can influence beliefs indirectly. That is, people also discuss what they read, see or hear with others, and use such interactions to validate their own experiences and expectations. Taken together, these processes lead to significant effects of the media on healthcare behavior. Given this important role of the media, it is imperative to know what the messages are that contemporary media are sending about particular health issues. How do the popular media reconstruct and portray illness and cure? How do the media present practitioners of health services and medical treatment systems? How accurate are the medical realities presented in the media when compared with reality? Let us examine these issues from the theoretical perspective as well as from empirical evidence.

Mass-mediated realities

Modern humanity, argue several communication scholars, is increasingly experiencing a mediated world rather than reality itself:

One of the major features of our current transition into the Age of the Mass Communication, then, is that increasingly we are in contact with mediated representations of a complex physical and social world rather than only with the objective features of our narrow surroundings. [1]

It was Walter Lippmann's classic work [2], *Public Opinion*, first published in 1922, that highlighted for the first time the possibility that factual features of the world often have little relation to the perception and beliefs that people entertain about the world. He claimed that people often act not on the basis of actual facts and events, but on the basis of what they think is the real

situation as they perceive it from the press. He was certainly the first to note the role of the media ("the press" in his time) in the construction of meanings and perceptions of the "world outside." Lippmann made the important distinction between the real environment and the pseudo-environment, sketched and delivered by the mass media. Although the terms "distortion," "false presentation" and "reconstructed realities" are frequently related to media presentations of reality, one should note that the media, in general, do not set out deliberately to deceive anyone, to manipulate, or to abuse their audiences. The ethical codes of journalism, the sacred principles of "objectivity," "accuracy," "value detachment" and "fairness" dominate most of the newsmaking process and the professional orientation of journalists and editors. However, there are factors beyond the control of editors, reporters and producers that cause this reconstruction of reality. The selection process in the media, due to the constraints of limited space and time, is the first source of such a partial and thus distorted presentation of reality: not all events can survive the multi-stage selection process and the remaining events are a poor sample of the full volume of occurrences. Moreover, the nature of news "stories" (note the storytelling nature of reporting news) is a reconstructed format of presenting events.

Journalism is mostly storytelling, thus providing a structured account of the environment, and like all stories, it structures events and experiences for us, filtering out many of the complexities of reality. An important element of the mass-mediated world is the integration of news and entertainment, facts and fiction, events and stories – into a symbolic environment in which reality and fiction are almost inseparable. Gerbner [3,4] argued that the study of the flow of symbolic realities from the media should be regarded as a force for enculturation rather than as a selectively used medium of separate 'entertainment' and 'information' functions. Thus, the news becomes storytelling, soap operas become news: they present to us realities from other cultures, other social strata and – despite their fictional nature – they are seen and interpreted as realities. Living in a mass-mediated world is the result of several processes: our reliance on media sources to know and interpret the "world out there," the distorting effect of the selection process in the media and the practice of writing news as "storytelling," and the mixture of

information and fiction where real and fictional worlds become a homogeneous, synthetic reality. Numerous studies have compared media reality with genuine reality and have done so within a broad range of topics, including gender roles, aging, political orientations, environmental attitudes, science, health, and religion (for a review see ref. 5).

The impact of the mediated realities on the audiences is significant. C. Wright Mills [6] presented the notion of "second-hand worlds," or realities experienced indirectly by people, using the mass media as credible and trustworthy mediators. We rely on the media to mediate reality to us, and our reliance grows the more dependent we are on media interpretation. One of the areas in which such dependence on media presentations was found to be strongest is health and illness.

In various areas of social reality, media researchers have documented the process of reconstructing reality as well as the process of cultivation when these reconstructed media realities are perceived by the audiences as the actual reality

Health and illness: the portrayal of reality in the media

The role of the mass media in health-related issues has been the center of many studies. Mass media are, for the general public, the most important source of obtaining information on health issues [7] and the public indeed shows a great interest in media coverage of health and sickness issues. In one such study, Carlsson [8] found that patients who do not receive satisfactory information from medical staff and doctors rely on non-medical sources to satisfy this need. Of the patients questioned 86% obtained information from newspapers, 82% from television and radio and 6% from the Internet.

An American national poll of 2256 adults commissioned by the National Health Council and conducted in 1997 found that 75% of those surveyed said they pay either a "moderate amount" (50%) or a "great deal" (25%) of attention to medical and health news reported by the media [9]. The primary sources of health news listed by respondents were television (40%), doctors (36%), magazines or journals (35%), and newspapers (16%). Interestingly, only 2% listed the Internet as a primary source but this rate grew considerably since this 1997 poll. Fifty-eight percent said they have changed their behavior or taken some kind of action as a result of having read, seen or heard a medical or health news story in the media. Forty-two percent reported seeking further information as a result of media reports.

From the abundant research material that has accumulated over the years, it seems that the media coverage of health and medical issues has two main outcomes, one positive and one

negative. While many studies indicate the important and positive role the media play in creating public awareness and informing the public, as well as the role of supervision and censure of governmental and public bodies [10-13], many other studies criticize the media's performance in covering health and medical issues [7,14-16]. The media's coverage of medical issues has often been subjected to severe criticism from the medical and scientific community. Apart from criticism that focused on "specific" mistakes and distortions, some studies have pointed to the inconsistency between the importance of topics in the eyes of the professional community and the preferences of the media, and to the fact that the media do not consider issues regarded as the most important by doctors and scientists to be significant [17].

Moreover, some members of the medical community feel that the media reports of health and medical issues do not always provide good service to the public since they are often inaccurate, are committed to commercial and competitive pressures, and their writers do not understand scientific processes sufficiently to report them [14-18]. It was argued that reporters often leave out important information in order to present sensational results and quote medical reports out of context, thus leading to false hopes or unfounded fears. Furthermore, reporters often rely on business and public relations people as sources of information about health issues, a practice that can lead to distortion in reporting due to the involvement of outside interests. Brezis [19], who studied the issue of the professional qualification of health reporters in Israel, interviewed 35 newspaper correspondents from the print and electronic press in Israel and carried out a content analysis of sample articles on health issues from the daily press. His findings point to the lack of professional background of journalists in the health and medical domains, their lack of epidemiologic and scientific knowledge, as well as insufficient use of the Internet for gathering professional information. In addition, his research found that most reporters do not allow their source of information to vet the intended report before its publication. About a third of the reporters argued that this is due to lack of time or because they do not see the need for data verification. A smaller percentage of the reporters admitted that they tend not to use medical literature or consult experts from complementary fields in order to check the information before its publication.

ER for error: miracles in emergency rooms

One of the most popular shows on television, all over the world, is ER, a Chicago-based drama that depicts the professional and personal lives of physicians, nurses and medical students working in the emergency department of a public hospital. In its depiction of a busy trauma center, ER presents exciting cases of cardiopulmonary resuscitation, often performed in young victims of violence. *Chicago Hope*, another hospital series, details the perpetually hectic lives of surgeons, whereas *Rescue 911* focuses on amazing, often miraculous rescues based on true incidents throughout the USA. One must consider the fact that most of the decisions on prospective use of CPR and other operations are

CPR = cardiopulmonary resuscitation

made jointly by the patients and physicians. But the patients' information may rely on many sources, including physicians, friends and family, and television series like ER or *Chicago Hope*. Thus, Schonwetter et al. [20] found that 92% of patients over 62 years of age reported obtaining information about CPR from television, 82% from newspapers, and 72% from books. In another study by Schonwetter and her colleagues [21], 70% of the patients over age 74 reported obtaining information about CPR from television. An alarming indication of the impact of relying on television is that patients overestimate their likelihood of survival after CPR, and this might lead them to choose this option in situations in which survival is extremely unlikely [22].

This led Diem and collaborators [23] to look at the depiction of CPR in three popular television programs, comparing the media reality with 'real world' statistics on CPR. The content analysis was of all the episodes of ER and *Chicago Hope* during the 1994-95 season, and 50 episodes of *Rescue 911* during 1995. The analysis found 60 occurrences of CPR, mostly caused by trauma, such as gunshot wounds, car accidents and near drowning. Only a few were due to cardiac causes. Most of these cases in TV were children, teenagers or young adults. Survival after CPR was very high in these series: 77% on average and 100% on *Rescue 911*. However, the survival rates in these programs were significantly higher than the real rates (40%). Comparisons between TV reality and real reality led the researchers to conclude that these three television programs give misleading information on various aspects of CPR, and thus may lead patients who rely on this 'evidence' to make wrong decisions.

First, the distortion starts with the kind of people most commonly given CPR. On television, these are mostly children and very young adults, while in reality this problem is much more common in the elderly. Second, cardiac arrest on television was often due to acute injury such as accident or near drowning, while in reality 75–95% of the cases result from underlying cardiac disease. Third, CPR succeeds more frequently on television than in reality. Finally, on television, the outcome of CPR was portrayed as either full recovery or death. However, in reality, CPR can lead to prolonged suffering, severe neurologic damage, and death. Such outcomes were not portrayed on these television series. As Diem and team argue [23], these findings may have an undesirable impact:

In a subtle way, the misrepresentation of CPR on television shows undermines trust in data and fosters trust in miracles. . . . We acknowledge that this drama produces good television, as evidenced by the large viewing audiences. However, these exceptional cases may encourage the public to disregard the advice of physicians and hope that such a miracle will occur for them as well. Faith is central to our ability to maintain hope in difficult situations and often is important adjunct to the therapy physicians offer. Belief in miracles,

however, can lead to decisions that harm patients. The portrayal of miracles as relatively common events can undermine trust in doctors and data.

One of the co-producers of ER, Dr. Neal Baer, responded to the criticism of Diem and his co-authors. The critical question raised by their study was whether viewers, particularly elderly persons, have an unrealistic view of CPR because of what they see on television. Baer [24] argued that it is difficult to determine exactly how the depiction of CPR on television influences beliefs and attitudes: "Diem et al. suggest that because of the high rates of survival after CPR on these television shows, patients and their families may have overly optimistic expectations of CPR. This criticism would have some merit if people indeed had unrealistic expectations of CPR after viewing these programs." Yet Baer is certainly ignoring the studies on media and cultivation. These studies show that not only does the public rely heavily on the media for impressions of CPR and other medical procedures, but it also leads to overestimation of success rates.

A case study: reporting cancer in the Israeli media

Many studies that dealt with cancer in the media pointed to the public's dependency on them as a source of information regarding cancer, its types, coping with the disease and more. A study investigating the way that cancer was reviewed in the written press [25] revealed many inaccuracies (which, in the researchers' view, are a result of the absence of professional reporters), lack of statistical data, and a tendency to focus on subjects that are of no informative use to the readers. The researchers suggest that an improvement in the media coverage of cancer must begin with those who give the medical information to the media, so that the reporter can have a clearer picture of doctors' and scientists' priorities and what they perceive as essential for the public to know.

Several studies focused on the way that cancer is covered in women's newspapers. In a Canadian study the coverage of cancer in the leading women magazines was examined over a 7 year period [26]. Content analysis performed on the articles showed substantial differences between the types of cancer covered and the reality. For example, lung cancer, which in reality has a higher death rate in women than breast cancer, is mentioned in only a few articles, in contrast to massive coverage of breast cancer. Furthermore, in general, coverage of "feminine" types of cancer (i.e., breast, cervical, ovarian) was higher in these magazines than their actual occurrence in the population. As for the content of the coverage, the articles did not propose any new and essential information about the disease, and official bodies that are trusted with the passing of the information to the public (cancer associations) were not quoted adequately. The researchers suggest that "over-reporting" of a specific type of cancer in contrast to "under-reporting" of other types may have an impact on the perception of risks and on preventive health behavior.

Another study found a discrepancy between the figures

for intestinal cancer in reality and the amount of coverage in women's newspapers and magazines [15]. The findings showed that there is no balance in the coverage of cancer types affecting women. There are more reports of breast and skin cancer than of lung cancer. Another finding showed the frequent use of military terminology: "fighting" cancer, cancer as a "killer." Cancer is depicted as a "murderous" disease and people who have cancer are "victims" of the disease. In this context, note the slogans of The Israel Association for the Fight against Cancer: "Help us conquer cancer," "Don't let cancer take life," and more. Clarke [15] mentioned some of the articles that were tested in the research and carried these headlines: "Radiological time bomb," "Early warning system," "Another small victory in the war against cancer," and so on. This research found the use of military terminology in a substantial number of American magazines: 56.3% of the articles were from the *Ladies Home Journal*, 16.9% from *Time* magazine and 44% from the magazine *McClain's*.

Numerous studies have shown that the public obtains most of its health information from mass media, thus highlighting the importance of mass-mediated medicine

We conducted a study designed to explore the patterns of reporting cancer in the Israeli press [27,28]. A systematic content analysis of the leading newspapers' reports and articles on cancer was used to examine the "media reality" concerning cancer, its characteristics, diagnosis, prevention and treatment. Then this "media reality" was compared with the actual reality as shown in data generated by the Ministry of Health, oncologists and cancer researchers in Israel. Such a comparison allows for an objective and systematic examination of the reconstruction of reality in the case of cancer. We studied Israel's three most popular daily newspapers – *Yediot Aharonot*, *Maariv* and *Haaretz* – since their combined readership covers most of the Israeli population. The units of analysis were all the articles included in all the newspaper sections that refer to cancer or mention it in their contents, and which were published during one year, 2000.

Our first hypothesis dealt with differences between the rates of occurrence of cancer types reported in the media and their rate of occurrence in the Israeli population according to medical data. We found significant differences between the media distribution of types of cancer and the statistical distribution of the Israeli population of cancer victims. For example, intestinal cancer receives under-representation in the media even though it represents over one-fifth of the most common cancer types. On the other hand, there are types of cancer that are more prominent in the media than their actual occurrence among the population, such as lung cancer, leukemia, skin, and breast cancer. Comparison of the media reality with actual reality according to patients' characteristics reveals even higher, more significant and worrying differences. Especially noticeable is the under-repre-

sentation of 'male' types of cancer. Prostate cancer, for example, which accounts for over a quarter of the most common types of cancer among men, receives only one-tenth of the coverage in press articles.

The second hypothesis dealt with the connection between cancer and death. It was suggested that the media emphasize the topic of death in connection with cancer more than its actual frequency, due to the media's preference for coverage of negative subjects and its inclination to dramatize. According to the data of the National Cancer Registry, 8821 cancer patients in Israel died in the year 2002 from among 20,926 cancer patients (42.1%). According to the analysis of media coverage, the term "death" was mentioned in 235 of 650 articles (36.2%). Hence, the mention of death in the articles does not represent the death rate in the population and even under-represents it. We found that press reports on cancer vary in the frequency of their mentioning death according to the type of cancer (as expected since there are variations in the mortality rates of different cancer types). However, there was no correlation between the references to death in the press and the mortality rates according to cancer type in the population of victims. We found very wide variance in these discrepancies: ovarian cancer, which in reality is highly lethal (around 75% mortality), is not represented as such in the media (only 28.6% of the articles dealing with this type of cancer mention death, a disparity of 47%), while the media associate melanoma with death much more frequently than it is in reality. Lung cancer is linked to death less frequently in the press than in reality, and in other cancer types there are also significant disparities. We may conclude that readers of newspaper articles, who rely on the media as an important and often sole source of information, will receive mistaken impressions of the proportion of fatalities and the risk of the different types of cancer.

Our third hypothesis dealt with the difference between frequencies of the types of treatments reported in the media and the frequency of use according to medical data. Media coverage refers to eight different kinds of treatments – from surgery for the removal of cancerous growths to radiotherapy or alternative/unconventional treatments. When we compared the order of prominence of the most frequent treatments in the media with the grading of their use by oncologists, a very high match was found. However, when comparing between different newspapers, this correlation was not found in all of them. Despite the general match between the popularity of treatment measures in the media and their use in reality, there are differences across newspapers. Also, the order of prominence of different measures of treatment varies somewhat among the newspapers. Our study also revealed that media reports referring to the treatment of cancer tend to be "optimistic" and many of them link successful results to various treatments. There was no correlation between the success of medical treatment in reality and the rates of success reported in the newspapers. The papers report on more successes resulting from radiotherapy treatment, alternative treatments and genetic treatment, while the method of surgery, which is thought to be the most successful in doctors' opinion, is presented as linked to success in only a third of the cases

in which it is mentioned (compared with 60% in the case of radiation and 43.8% in alternative treatment).

Conclusions

The findings of numerous studies on media portrayal of illness in general and specific health issues in particular reveal that the media tend to present a reconstructed reality that differs from official data. How can we explain these findings? Several factors combine to provide an answer. Some of these factors relate to media routines of operation in terms of news selection, reliance on sources, and allocation of space and prominence according to newsworthiness and editorial policies. The media prefer to choose interesting stories, those that will captivate audiences, and therefore prefer to concentrate on more dramatic accounts, heroic struggles, or moving tragedies [29]. Some examples may illustrate this media selection: the number of reports on cancer in children and adolescents, far beyond the actual proportions, stems from the emotional and human-interest value of such 'items'. Children suffering from cancer receive wide coverage because their stories are more dramatic, shocking and enthralling. Hospitals and doctors are also aware of this practice and tend to expose children's cancer wards to the media; for example, hosting well-covered media events with soccer or basketball players, artistes and celebrities visiting the children. Thus, reporting health-related issues, as with all other issues, is affected not only by their frequency or medical importance but, in a substantial way, by their newsworthiness and their media appeal (or lack of such an appeal).

Media coverage is also influenced by the professionalism of the reporters. Some media employ reporters who specialize in medical and health-related issues, while others do not and therefore allocate to such items reporters from other domains. Moreover, there are different sections in the newspapers and the allocation according to section is related to the nature and accuracy of the story. In some cases the articles are placed in the medical and health sections, but more often they are published in news supplements, personal stories sections, and articles about celebrities and their personal stories. There are also differences across media according to the medium's orientation, that is, between popular papers, entertainment communications, professional media, and quality communication specializing in certain fields. Commercial newspapers, especially mass-distribution newspapers, compete for audiences and attract them with colorful writing and dramatic human stories. The targeted audience and the press orientation determine the choice of story and the way it is told.

The journalists and the media processing of information are not the only actors shaping the media coverage of health and sickness. Hospitals, research institutes, doctors, spokesmen and promoters, pharmaceutical manufacturers, industries of diagnosis and healing, laboratories, and organizations associated with health-related issues are all involved in the process. Among them there are several actors with media awareness and media-oriented activities. This holds for some doctors, manufacturers and industries, hospitals and departments. Such actors promote

"stories" that appeal to the media and satisfy their selection considerations while serving the sources' reputation, financial or commercial interests, public exposure, and so on. In media articles it is obviously difficult to identify the interested source but it is easy to see that this activity is fruitful. For instance, the mention of "success" in press reports was found, in our study, to be directly connected to mention of the source of the report (doctor, hospital, department, pharmaceutical manufacturer). We found that in cases where the source was from the drug industry, the use of the word "success" reached 60% of the articles (while the rate of mention of "success" overall in the articles stood at about 21%).

How do the popular media reconstruct and portray illness and cure? How accurate are the medical realities presented in the media when compared with reality?

A considerable share of media coverage of health and sickness is devoted to human stories and not statistics or dry chronologies. These stories are not, by nature, made to represent statistical reality or scientific databases. They accentuate the personal aspect, the human story, and often the dramatic, extreme and unusual. It is not surprising that media selection prefers to report the illnesses, struggles and even the death of certain public figures such as well-known politicians, actors, artistes, sportsmen, tycoons, and other celebrities. Their personal experiences make an interesting media story that leads to a distorted focus on certain types of sickness, certain methods of treatment, and certain characteristics of patients. Celebrity-related stories promote media interest, public interest, and social communication more than the statistical reality. The impact of cultural heroes and media coverage of their personal accounts has a great influence. An illustrative example is the case of the late Mrs. Ofira Navon, wife of the Israeli President, who decided, as a breast cancer victim, to reject her doctors' recommendation to remove her breasts and preferred to seek alternative measures. This personal campaign, which received huge media coverage in Israel, promoted public awareness and interest in breast-conservation methods as an alternative to breast removal (despite her death).

In various areas of social reality, media researchers have documented the process of reconstructing reality as well as the process of cultivation when these reconstructed media realities are perceived by the audiences as the actual reality. The findings on the reconstructed nature of mass-mediated medicine may not surprise those involved in the study of media realities [5], but they have a unique significance when related to health-related issues that carry the risk of suffering and death. In many fields, reality cultivation in the media has proved to form wrongful perceptions and expectations among their audiences. In the case of medicine, a heavy price could be paid for these erroneous perceptions and expectations.

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