

University of Groningen

Making news about medicines

Trigt, Anna Maria van

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Document Version

Publisher's PDF, also known as Version of record

Publication date:

1995

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Trigt, A. M. V. (1995). *Making news about medicines*. s.n.

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MAKING NEWS ABOUT MEDICINES

INTRODUCTION

1.1

INTRODUCTION

People are very interested in information about health and illness. Durant et al. showed that people are very interested in information about medicine [1]. They are more interested in new medical discoveries than in sport in the news [1,2]. Furthermore, television programmes about health and illness attract many viewers [3]. Karpf argues that the media's longstanding interest in health and medicine has swelled in recent years into an obsession [3]. Audiences respond eagerly to the media's offers of health information and would welcome more information about this subject in the mass media [3-5].

In the last three decades information about health and illness has become more important. We can distinguish two major trends, enhancing each other, to explain the increasing information demand of the general public. First of all, since the 1970s patients have become more and more involved in health care organization, provision, financing, and research [6,7]. Although the first patient association in the Netherlands was already founded in 1945 [8], the number of patients' associations significantly increased only in the 1970s [9]. The access to relevant and new information about disease, their causes and treatment is of major importance in this emancipation process. People became more involved in decisions concerning their health and illness. Patient education and counselling became more prominent and the number of mass media cam-

paigms to educate the people about health and illness seemed to increase. Pharmacists, physicians and other health care workers became more often involved in patient education and have tried to meet the information needs of patients. In the Netherlands in 1970s pharmacists started to supply patients with written information about medicines; nowadays pharmacists have to deliver Patient Package Inserts for all medicines [10]. Since the beginning of the 1980's the Royal Dutch Association for the Advancement of Pharmacy has produced several information leaflets, for example, about the use of medicines during pregnancy.

Secondly, the democratization process that took place in society had its influence on science as well; without information it is difficult for the public and politicians to participate in a decision-making process about science [11,12]. Scientific knowledge and developments have major consequences both direct and indirect on people's lives. The public had to be informed; "the public's right to know" also became implemented in the field of science [13]. During the last 10 to 15 years universities have attached more importance to the information about science and technology towards the general public and appointed public information officers [14]. In the 1970's the universities in the Netherlands started up science shops ("wetenschapswinkels") to make scientific information available to the general public [15]. The Dutch Departments of Education and Science and of Economic Affairs subsidize an association "Publieksvoorlichting Wetenschap en Techniek" to stimulate and improve public understanding of science and technology in the Netherlands [16,17]. This association organizes several projects to inform the general public about science and technology [17].

The general public can use different sources to obtain information on science and technology. Most people become familiar with at least some scientific principles during their education. Some people obtain information about science and technology because of their jobs. Others are interested in scientific developments out of curiosity. They can use several sources to get information, for example, books and magazines. They can visit exhibitions and a science centre or museum. But for most people the reality of science is what they read in the press [18]. A small survey of Patterson among young adults showed newspapers to be the primary source of science news; this was also the preferred medium of such news for 54% [19].

In Dutch, German and British newspapers science news is dominated by news on medicine [20-22]. In magazines news about medicine is also an important issue. According to Kessler (1989),

who studied the content of six American women's magazines over a period of five years, it was immediately clear from the content analysis that women's health was a major concern in all six magazines. Only a handful of issues contained no health information [23]. In the Netherlands, about 5% of the content of family magazines was devoted to information about science and technology dominated by medical information [24]. According to Rees (1987) the explosive growth of popular health literature is a response to the public's voracious appetite for health information and reflects an increasing sophistication of the health care consumer [25]. While it may seem that news organizations are doing a public service by communicating important health information to their audiences, they do not so because of an altruistic desire to better the human condition, but to sell more newspapers and magazines or charge higher rates for commercial time [26].

1.2 ROLE OF THE MASS MEDIA IN THE TRANSFER OF INFORMATION ON MEDICINES

Mass media play a central role in the transfer of information on medicines; they function as intermediary between the scientific community, the pharmaceutical industry and government on the one hand, and the lay public on the other. However, the lines of communication are more complicated (see figure 1). In this paragraph we will look at the position of the general mass media among other channels of information exchange.

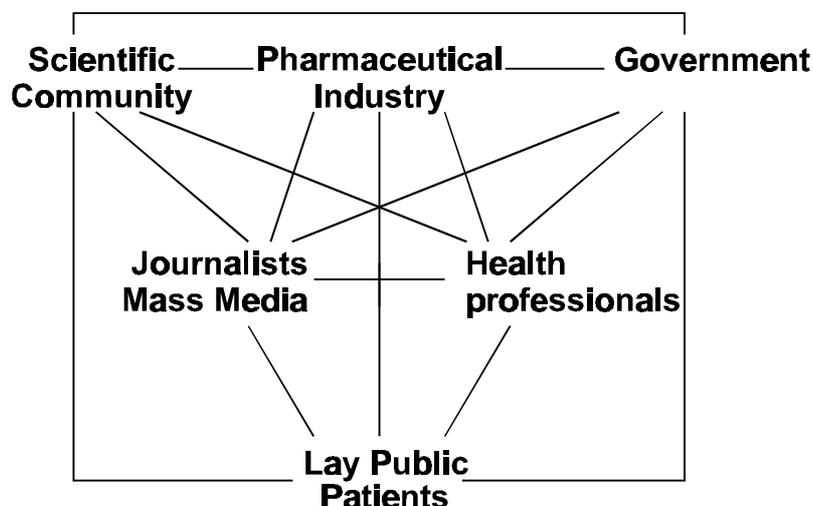


Figure 1
Transfer of information on medicines

Transfer of information in and to the scientific community.

Scientists use different channels for communication: papers in scientific journals, meetings and 'informal' contacts with colleagues. Papers are considered to be the most important formal channel of communication. Many scientists first report on their work in some relatively informal way. In this way authors can obtain a considerable amount of feedback before formal submission of a paper to a journal [27]. Before the message, in this case the paper, is sent to the journal, a lot of interaction about the information and its meaning has already taken place and information has been changed as a consequence of this interaction. At the level of the journal again interpretation of the paper and its meaning occurs. After submission the paper is usually sent to referees. These referees judge whether the paper is an acceptable contribution. They advise the editor on whether the paper has to be refused, changed or can be accepted. The editor finally decides whether or not to publish the paper. The decision to accept or reject a paper not only depends on the comments of the referees but also on the amount of space available in a journal and the number of papers submitted to that particular journal. The editor acts as a "gate-keeper" in scientific communication. However, the term seems unsuitable, since this gate-keeper is actively involved in the construction of the message by suggesting changes and adaptations. The gate-keeper concept is well known and often used in communication research, so we will use this term but stress the fact that in case of scientific journals gate-keepers are active participants in the communication process.

The first scientific journal was published somewhere in the 17th century. Through these journals the casual reader might inform himself without the, formerly essential, network of correspondence, private rumour, and browsing in Europe's bookstores. Their original purpose was a social one of finding out what was being done and by whom, rather than a scholarly one of publishing new knowledge. The transformation of the scientific paper into its modern state was not complete until about a century ago. In 1963 De Solla Price estimated that about 600,000 new scientific papers would be published every year [28]. In 1974 already 1.6 million papers were published annually [29]. So, in any case, even when important, acceptable scientific papers appear, they are read by only a small number of scientists. Although, the last decade scientists can make use of several computerprograms to identify papers relevant for their own work, no one is able to read all the papers.

General mass media can also inform scientists about developments in their own field. For example, Willems and Woudstra (1993) found in their survey among Dutch biologists and engineers that about 70% obtained information on new developments in their own field from non-specialist media, including the general mass media. Because journalists are active communicators, they can stress and add certain aspects of the development and, therefore, give this development a different meaning. In the same survey, 65% of the biologists obtained information from non-specialist media on the social aspects and effects of research in biology [30].

Phillips et al (1991) examined the role of the New York Times in the transmission of medical knowledge from the scientific literature to the research community. They showed that articles covered by the Times were more often cited in scientific publications than articles from the New England Journal of Medicine that were not covered by the Times. Their study shows that mass media, in this case the New York Times, plays a role - an important role - in the transfer of medical information from the scientific literature to researchers [31].

The role of the science journalist is also important if one considers scientific information on the borders of or outside one's own specialism. Again, about 70% of the biologists obtain information from related fields from non-specialist media [30]. The further apart a specialism is from one's own specialism the more one becomes a lay-person. Every discipline or research field develops its own jargon. Most importantly, as new data is generated, differentiation among new and existing data requires a vocabulary to develop that furthers precision and specialization. It is this need for exactness and expertness that makes interdisciplinary communication very difficult [32]. Furthermore, the further apart (in terms of subject matter, conceptual similarity, etc.) two disciplines are the longer the information is likely to take in passing from one discipline to another [27].

Transfer of information to health professionals

Three major sources communicating about medicines to health professionals are the scientific community through scientific medical journals and scientific meetings, the pharmaceutical industry using among other channels medical representatives, and the government.

Between the practising health professional and the scientific community, pharmaceutical industry and the government, there is often a complex infrastructure that filters and interprets information and influences the decision to adopt new treatment innova-

tions directly by the health professional. First, there are various professional "gatekeepers" who evaluate and change information before it is disseminated. These include, among others, journal reviewers and the professional leadership who in many ways formulate a consensus on the meaning and relevance of new scientific breakthroughs. Often these individuals establish the criteria and define what is ready for dissemination through their positions on various advisory panels [33]. For example, in the Netherlands, physicians prefer to use printed professional sources to gather drug information. Especially the Dutch Drug Bulletin (Geneesmiddelenbulletin) and the compendium of the Dutch Health Insurance Council (Farmacotherapeutisch Kompas). Furthermore, the local pharmacist is seen as an important source [34]. All these three sources interpret scientific developments and translate the meaning of these developments into general practice.

Besides the direct communication to health professionals these three groups communicate with journalists and, thereby, indirectly with health professionals and patients.

Health professionals also read daily newspapers and family magazines. Both Shaw and O'Keefe showed that doctors receive information about new research developments within their own speciality from the mass media [35,36]. About one third of the 425 Flemish physicians in a survey indicated that they read articles about medicine in daily newspapers and weekly magazines [37]. Sturkenboom et al. found that a high proportion of health professionals were notified by the mass media about the fact that the post-therapy contraception period after acitretin therapy was extended from two months to two years. Both the company selling acitretin and the authorities sent letters to all health professionals and, in addition, sent a press release to the mass media [38].

Moreover, health professionals are confronted with patients who have read certain things or have seen them on television.

Transfer of health information to the general public

Connell et al. examined the roles of various sources of health information, including television, radio, magazines, health care providers, and informal network members. The majority of respondents in their study reported printed material - health articles in magazines, medical columns in newspapers, news stories in newspapers, publications from health organizations, and medical books - to be the most frequently used source of health information [39]. Damoiseaux showed that physicians and medical specialists are the most often used and preferred source of information on health and illness. Only 12% of the respondents in his study mentioned

the mass media as a source of information [4]. Wright studied the use of mass media as a source of health-related information in a small survey. Newspapers and magazines seemed most useful to the group of people seeking information [40]. In a Dutch study, the public considered television to be the most reliable mass media source of health-related information [4]. Johnson and Meischke studied lay information sources about cancer and found that the media is the source of most of the public's health information in spite of clear preference for information from other channels (e.g. physicians) [41].

There is debate about the role and the importance of different mass media channels as source of health-related information. This might be partly due to the methods used in order to gain insight into the importance of the sources. Mass media can play a role as a source of health information in general or can draw attention to new developments whereas health professionals can supply patients with specific information on health and illness.

As shown in table 1, the mass media - newspapers, magazines, and television - do play a role as a source of information on medicines for a lay audience. Although sources like the physician and the patient package insert are more often mentioned as sources of information on medicines than, for example, daily newspapers and family magazines, the latter sources are more easily accessible. The typical American visits a doctor several times a year. The same American reads a medical article in a newspaper or magazine several times a month; he or she watches a TV show featuring a medical problem several times a week [46]. About 75% of the Dutch population over the age of 13 visits a physician at least once a year [47], and Dutch television, radio, newspapers and magazines do pay attention to medical topics [48].

Table 1

Information sources about medicines in the Netherlands. (% respondents mentioning source spontaneously, excluding 4)

	1	2	3	4
Patient Package Insert	63%	16%	14% (82%)	78%
Physicians	54%	46%	16% (61%)	77%
Books	33%	52%	--	38%
Magazines	26%	42%	--	31%
Pharmacist	14%	8%	4% (25%)	28%
TV	--	--	10% (63%)	27%
Daily newspapers	--	--	15% (50%)	--

1. interviews with 87 women between 45 and 50 years [42].
2. interviews with 294 women who have just delivered a healthy baby [43].
3. IPM data from Visser, 1989. Between brackets the percentage of respondents men - tioning source after assistance from interviewer [44]
4. Survey in a family magazine [45]

Thus, the lay public receives information about new drugs and treatments through the mass media and through communications with friends, relatives, etc. When they become "patients" they also receive information about medicines from different health professionals.

The fact that people do use the mass media as sources of information on medicines, and the large number of people that can be reached by the mass media, illustrates the enormous communication potential of these channels, both health professionals and the lay audience use the mass media as a source of information on medical information. Sometimes, information in the mass media also influences health authorities' decisions, this effect will be illustrated in the next paragraph.

1.3 EFFECTS OF MASS MEDIA REPORTING ON MEDICINES

There has been much debate over the possible effects of the mass media during the last decades [49,50]. Every day experience provides countless examples of small effects. 'Case reports' show that the mass media can influence individual health behaviour, health care utilization, health care practices, and health policy.

Both Wellings and Jones et al. showed that negative publicity in the mass media resulted in the change in women's "pill"-taking behaviour - a decline in the use of the "pill" [51,52]. The lay media was also an important communication channel in alerting health professionals and patients about the relationship between aspirin and Reye's syndrome [53], and in informing both patients and health professionals that the post-therapy contraception period after acitritin therapy was extended from two months to two years [38]. In the Tylenol case, the mass media notified 70% of the population about the cyanide-laced Tylenol [54]. Bad news about medicines often affects consumer behaviour, especially if alternative products are available [18].

Deliberate efforts to use the press to influence behaviour do not necessarily have the effect anticipated [18]. Still, physicians and medical doctors state that once a new drug or new therapy is discussed in the mass media they do get more questions about this new therapy [55]. According to a Dutch gynaecologist, family magazines were very helpful in introducing the sub-50 oral contraceptives in the Netherlands [56].

Mass media reporting can also have effects on drug policy decisions. A German newspaper sensationalized the thalidomide dis-

aster and, thereby, accelerated the withdrawal from the market, six days after Dr. Lenz first suggested it might be teratogenic [57]. In July 1979, the Dutch Registration College imposed a six-month withdrawal of the product license for triazolam (Halcion®) in the Netherlands following public pressure initiated by a single psychiatrist. This psychiatrist published his findings of "alarming" adverse effects in July 1979. During the same period his findings received attention on television and in newspapers [58]. Not only the withdrawal of a pharmaceutical from the market can be initiated by mass media publicity, sometimes, this kind of publicity accelerates the testing or registration procedures of a new drug. News publicity surrounding the debate about laertile as a cancer cure forced the National Cancer Institute in the U.S.A. to test the drug on human cancer patients even though the lack of therapeutic effects on animals normally would have precluded human testing [18].

In 1992 Canadian health authorities were forced to start an extensive vaccination programme after intensive publicity surrounding the outbreak of meningococcal disease [59].

All the above described examples show that mass media publicity informs people about medicines and may have effect on individual health behaviour, health care practices and health policies. Furthermore, press coverage has a unique capacity to influence not only the outcome of public discussion of issues, but also, whether or not any particular issue is even brought before the public at all [60].

1.4 CRITICAL VIEWS ON NEWS ABOUT MEDICINES

Because of the effects media reports may have health professionals and researchers in the medical and pharmaceutical field are very concerned about the accuracy of reports about medicine(s) in the mass media. They realize that the media can play an important role in educating the public about science and especially medical developments.

Mass media reporting about medicine(s) has been criticized for several reasons. First of all critics argue that sometimes reports in the mass media raise false hopes [61-63]. Partly, this kind of criticism illustrates the problem of premature publicity in the mass media of preliminary [64] or unpublished studies [65].

Another concern within the scientific community seems to be that science reporting in the media does not portray the reality of scientific research or current developments and concerns in the

scientific community. Some topics are overemphasized while others receive no media attention at all. Koren found that studies in medicine showing some effect were more likely to receive media attention than studies showing no effect. In that case, the public is likely to receive an unbalanced picture concerning controversial health issues [66]. This publication bias is also found in scientific and medical journals; the two trends reinforce each other. Furthermore, much attention is paid to miracle cures, and technical and intellectual fireworks [67]. Some authors argue on the other hand that bad news is more newsworthy than good news [51,68].

Some diseases receive proportionally more media coverage than others, although they may be rare and have a low(er) incidence [69,70]. Kristiansen concludes that whatever the reasons for such bias in coverage, if they lead to misperception of health risks by the public, this may create problems for health education and preventive medicine [70] and research funding. Some people argue that because AIDS received much attention in the media, cancer related research received less financial support than it might otherwise have done [71].

Mass media reporting about medicine(s) has contributed to medicalization [67,72] since no critical analyses of new medical possibilities have been presented by the media [67]. According to Karpf the medical establishment generally wants the media to reproduce medical values and ideology. She suggests that it is (partly) because journalists have so enthusiastically adopted a belief in the efficacy of medicine that they are attracted to stories of breakthroughs and cures. In other words, the medical orientation favoured by doctors has itself, to some extent, generated the media excesses which doctors deplore [3].

Mass media reports do not pay enough attention to practical information. This criticism is important in relation to the attempts from health educators to pass on certain educational messages through newspapers, magazines and television. Commissaris analyzed articles in Dutch newspapers and magazines about dementia and concluded that very little knowledge about this illness can be obtained from the mass media [73]. Freimuth criticized news stories on cancer because the articles seldomly provided information on prevention, risks, detection, and treatment of cancer, information considered vital to the individuals' ability to understand and take action concerning the disease [69]. Articles about medicines in family magazines in the Netherlands contained little information on the side-effects of drugs (see annex 1), although both patients and health professionals consider this kind of information to be

important [74,75]. Information about side-effects is needed in order to make a balanced decision whether or not to buy an OTC (over-the-counter) drug or to use a prescription drug. An American study on information about premenstrual syndrome in popular magazines showed that only a few articles discussed the side-effects of progesterone treatment [72].

1.5 JOURNALISTS AND INFORMATION ON MEDICINES

Some of the forms of criticism discussed in the previous paragraph are related to the functions the mass media should serve according to health professionals and health educators. Others seem to be related to the sources used by medical journalists and the way journalists work, while most mass communication studies have concentrated on the effects of mass media content on audiences [76]. We completely agree with Shoemaker and Reese [76] and believe that it is equally important to understand the influences that shape the content, especially because health professionals have been criticizing almost continue the content of mass media messages about medicine.

The concept of gatekeeping is useful for understanding the process of making news. In 1950 White introduced this gatekeeping concept. In White's model, the news organization was considered to be a gate, some messages pass the gate and are published while other messages are rejected at the gate [77,78]. The model was very simple and was criticized for many reasons. The model implies a rather passive activity as far as the flow of information is concerned, ignores organizational factors influencing the news flow, and suggested that there was only one main gate area [77]. White's study stimulated many others to study the selection process at the gate and to develop models and theories to describe this process. Nowadays, the gate-keeping concept (see figure 2) involves every aspect of message selection, handling, and control [78].

Nelkin stresses the active role and the power of the journalists in the selection of news. According to Nelkin journalists in effect are brokers, framing social reality and shaping the public consciousness about science. Through their selection of news they set the agenda for public policy. Through their disclosure of new discoveries they affect consumer behaviour. Through their style of presentation they lay the foundations for public attitudes and actions [79].

In the process of choice or selection, a whole series of decision moments occur. As a first step, the journalist himself may to some

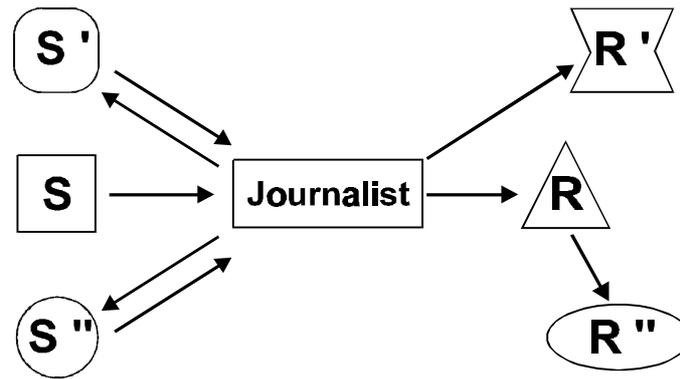


Figure 2
Position and role of journalist in the transfer of information

S = sender/source of information. Some sources send information to journalists unasked (S), while other sources, for example scientific journals, are chosen by journalist (S'). Information obtained from these sources is selected and interpreted by the journalist. Sometimes more information is needed and other sources are consulted (S''). The original message is changed into a newspaper or magazine article by the journalist/gatekeeper. During this process of communication the meaning of information may change (a short introduction to communication models can be found in annex 2). R = receiver/ reader of the article. The receiver again selects information to read and interprets the information. Different receivers (R,R') can attach different meanings to the same article. A receiver can become a sender once (s)he tells someone else (R'') about what (s)he has read.

extent influence the flow of information by selective subscription to particular scientific (medical) journals. Much other information is, however, sent unasked for to the journalist by other types of sources which may have a particular interest in seeking publicity.

In a second step, the journalist select items that are newsworthy. Whether he writes an article about this item depends on several factors, e.g. whether the journalist is able to gather enough information or whether he can find appropriate experts to comment on the topic. Once an article has been written, the question whether it will be published or not depends on another set of variables, in particular, the competition for space from other articles or news available that day.

Sources used by journalists

Science correspondents writing articles can make use of various sources. Science journalists' major sources of information have shown to be scientific journals and personal contacts with scientists [22,80]. Sometimes, information from scientific meetings is viewed as useful. In general, the industry does not seem to play an important role [22]. A study among journalists writing about medicine in France and Belgium showed both the scientific/medical literature and medical professionals to be major sources of information. The pharmaceutical industry was mentioned by less than half of the respondents in this study as a source of informa-

tion [81]. Journalists writing about medicines can use the same sources, among others, for example health authorities and consumers' organizations. All these organizations may have an interest in mass media publicity and play an important role in what becomes news. They decide on what kind of information about medicines they make available to the journalist [82].

Scientific (medical) journals: At first sight scientific (medical) journals seem to have no advantage by mass media publicity. Their primary goal is to supply their audience with relevant scientific information. However, for most of these journals their existence largely depends on the advertisers and advertisers that can be attracted by mass media publicity. Squires, the editor in chief of the journal of the Canadian medical association, states that editors of medical journals must realize that media coverage is important in drawing doctors' attention to their journals, which in turn attracts advertisers [83]. Some journals have begun to see the advantage of media publicity. Advance copies of the New England Journal of Medicine, Nature and Science are sent by first class mail to journalists, who must respect the mandated release before writing stories on the articles. These competitive journals want to maintain their image as the key sources of scientific information for the public, and they use the press to this end [18]. Many editors of scientific journals have adopted the "Ingelfinger Rule", named after the editor of the New England Journal of Medicine, Dr. Ingelfinger. The Ingelfinger rule is a policy of journals of considering a manuscript for publication only if its substance has not been submitted or reported elsewhere. The purpose of this policy is twofold. In the first place it protects the newsworthiness of the journals. Secondly, research is published in the scientific literature - after peer review - before it is brought to the public. Physicians and other health care professionals have the opportunity to read the full reports of new developments in order to judge their merits [84,85].

Scientists and medical doctors: Researchers and medical doctors can have several reasons for talking to the press. According to DiBella et al. the most important reason cited by scientists was to educate the public. The second most important reason was to engender public interest in their field. The least important reason was to enhance the opportunity to gain commercially financial rewards [86]. However, in both Britain and the United States, at a time of growing cuts in medical research, media exposure is thought to benefit applications for grants [3].

Most major research institutions, including universities, employ public relations professionals to publicize the work of their institute and, thereby, to enhance the image for their institution. Good public relations is important to these institutions, which must attract students and staff, gain future funding (both private and public) for research and maintain public legitimacy [18,62].

The pharmaceutical industry: There is evidence that the pharmaceutical industry is becoming increasingly interested in the passing of messages through the mass media to the general public [87] and health professionals [88].

Pharmaceutical companies use several different strategies to promote their drugs. Most of these promotional efforts focus on health professionals. Through advertisements, direct mailing, and drug company representatives health professionals are made aware of new drugs. Furthermore companies organize meetings, conferences and give out free drug samples and gifts to promote their products and improve their image. These activities have become more and more regulated by codes of pharmaceutical manufacturers (for example, "European Code of Practice for the Promotion of Medicines" adopted by the European Federation of Pharmaceutical Industries' Associations [89]), and regulations. Therefore, pharmaceutical companies try to find other ways to promote their products. Because EU directives forbid the advertising of prescription drugs to the general public, one sees that pharmaceutical companies try to gain interest from the mass media journalists to pass on messages to a mass audience [90,91].

Consumer organizations: Patient and consumer organizations are also interested in mass media publicity to inform a general audience about a certain disease, to stimulate fund raising or to influence politicians and health professionals.

As shown above, all the sources might have an interest in mass media publicity and will supply information to journalists at different moments.

Selection of items

From all the information available journalists have to make a choice. Which topics are newsworthy enough to write an article about?

The process of selection in determining what is newsworthy and merits publication has been studied in various ways, focusing on various phases or elements in the process. The concept of news

factors, for example, tries to trace back news selection to specific qualities of events [92] independent of the gatekeeper. Galtung and Ruge (1965) examined published articles using content analysis to test their well-known theory of "news factors" [93]. Other researchers, in contrast, have asked journalists themselves about the criteria that they use in the selection of items for their writings (see for examples concerning science writers: Stappers et al., 1983 [94]; Winnubst, 1990 [95]). Questioning journalists directly gives information about the process at the level of the journalist, while content analysis focuses on the outcome of the process.

Winnubst (1990) asked Flemish science writers about the criteria that they use in the selection of science news. The science journalists indicate the following six criteria to be important: scientific relevance, topicality, relevance for society, importance for the reader and their own interest [95]. Stappers et al found another criterion - degree of complexity - to be important as well [94].

Obtaining extra information

After the selection of an item, extra information may be needed. Experts may be consulted to obtain information or to check information. Much research has been concerned with the contacts between scientists and journalists (see for example Willems 1976 [96]). In this step in the process of making news, several different sources can again be used and their information can influence the content of the news story.

Although scientists and other professionals may have several reasons to have a positive attitude towards cooperation with journalists several problems have been described in the communication process between experts and journalists. According to Willems (1976) there are two kinds of barriers in this communication process. Absolute barriers are created by scientists who stick to the principle that the diffusion of scientific information by means of the mass media is not right. Relative barriers are created by scientists who have a positive attitude towards communication through mass media, but who do not agree with the way it is done and therefore complain. Willems found relatively few scientists who put up absolute communication barriers in the 1970s, but the scientists had complaints about journalists, and the scientific quality of the science articles in the newspapers [96].

A lot has changed since that time, universities and research institutions attach more importance to the education of the general public and many have appointed public information officers [14]. To facilitate the contact between scientists and journalists, the Scientists' Institute for Public Information in the U.S and the Ciba

Foundation in the U.K have founded both a Media Resource Service (MRS). These free referral services have put journalists in touch with experts in science, medicine and technology [97].

Although various initiatives have been taken to facilitate the contacts between scientists and journalists there still are problems in the communication process. In the field of medicine, physicians and scientists still are suspicious of reporters. They fear remarks will be taken out of context, or that they will be misquoted [98]. Several studies, concerning the relative communication barriers, have focussed on the lack of accuracy in mass media reports of science [e.g. 99-101]. These studies, however, did not deal on with the question whether a relevant expert was consulted. This question seems relevant because a survey of Dunwoody and Ryan [102] showed that scientists are often being asked by journalists to comment on topics outside their area of expertise.

1.6

SCOPE OF THE STUDY

The present study is designed to obtain insight in the process of making news about medicines. While most studies in mass communication have concentrated on the effect of mass media publicity it is equally important to understand the influences that shape the content. This is especially relevant since health professionals have been criticizing almost continue the content of mass media messages about medicine and content determines the effect. The underlying concern was if the mass media can be considered a good channel in optimizing rational drug use.

The main question adressed in this thesis is: Which sources are used by journalists writing about medicines and for what reason do they use these sources? Furthermore it was studied which kinds of medicines are discussed in the lay mass media. The mass communication channels we included in this study are daily newspapers and family or women's magazines.

These types of channels are so different that it is important to study both seperately, the situation regarding newspaper journalists is discussed in chapter 2, 3 and 4; the family magazines are discussed in chapter 6.

In chapter 2 we will study the sources of ideas and information used by journalists who write about medicines and work for daily newspapers. We pay attention to selection of sources because this is the first step in the selection of news and the sources of information used by a journalist shape the content of the message.

In chapter 3 we explore the role of the scientific and medical literature as source of ideas and information in more detail. The role of experts will be discussed in chapter 4. We also explore the kind of experts used to obtain information on medicines. Special attention is paid to the role of the pharmacists. In chapter 5 we pay attention to the role of the pharmaceutical industry as source of information. In chapter 6 we discuss the sources used by journalists working for family magazines.

SUMMARY

This thesis focuss on information about medicines in the mass media for four reasons:

1. the public has become more and more interested in information on medicine and pharmaceuticals;
2. much attention is paid to medical news in the mass media;
3. both patients and health professionals use the mass media as source of information;
4. mass media publicity can have effect on individual health behaviour, health care practices and health politics.

The scope of this thesis is to study the sources used by journalists writing about medicines because:

1. in mass communication studies much attention has been paid to study the effects of mass media reporting, but little is known about factors influencing the content of the mass media;
2. the kind of information released by sources influences the content of mass media reports;
3. the pharmaceutical industry becomes more and more interested in the role the mass media can play in the transfer of information.

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