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Making News about Medicines

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CHAPTER 1

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-

paigns 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.

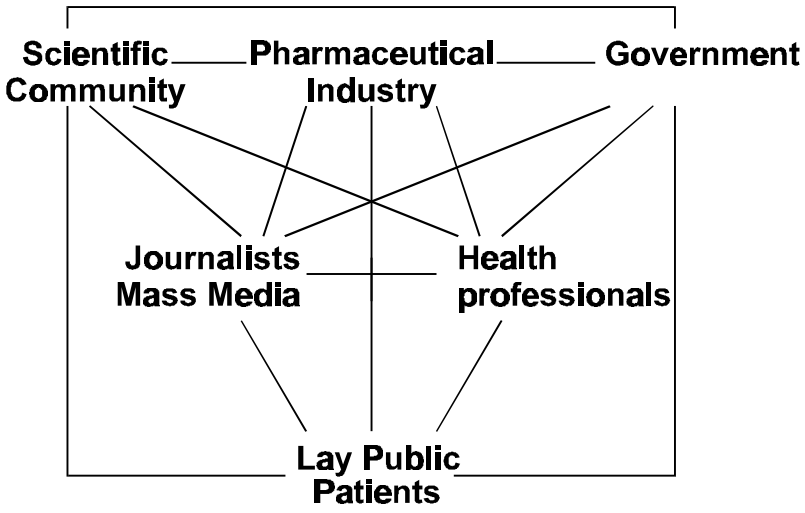

Figure 1
Transfer of information on medicines

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 send to the journal, a lot of interaction about the information and it's 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 it's 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 it's 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 al. 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

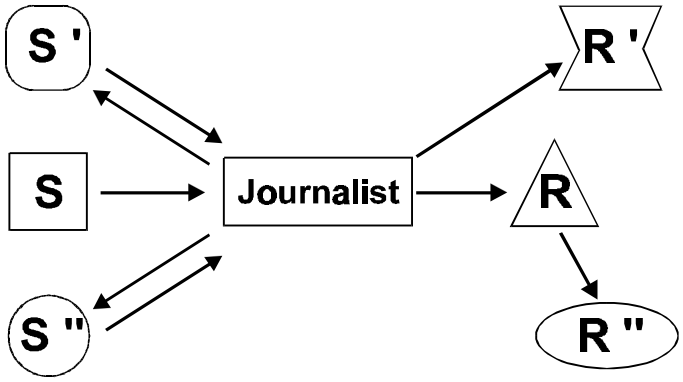

Figure 2
Position and role of journalist in the transfer of information

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 critizising 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.

REFERENCES

1 Durant JR, Evans GA, Thomas GP. The public understanding of science. Nature 1989;340:11 -14.
2 Willems J, Woudstra E. Voorlichting over wetenschap, technologie en techniek (pp15-23). In: Handboek Wetenschaps- & Technologievoorlichting. Willems J, Woudstra E (red). Groningen: Martinus Nijhof Uitgevers, 1993.
3 Karpf A. Doctoring the media. London: Routledge, 1988.
4 Damoiseaux V. Listen, lusten en lasten van massamediale voorlichting. Assen/Maastricht: Van Gorcum, 1991.
5 Giesbers N, Schaapsmeerders F, Schretlen I. Beeldvorming over medische informatie in de media; patientenenquete. Medisch Contact 1977;32: 1557-65.
6 Leufkens HGM, Haaijer-Ruskamp FM, Bakker A, Dukes MNG. De toekomst van het geneesmiddel in de gezondheidszorg: een scenario-analyse. Houten, Bohn Stafleu, Van Loghem, 1993.
7 Wachter RM. AIDS, activism, and the politics of health. N. Engl. J. Med 1992; 326 (2): 128-133.
8 Voituron GJH. Diabetes Vereniging Nederland. Pharm Weekbl 1989;124: 52-3.
9 Wilk J van der, De patientenbeweging. Pharm Weekbl 1989;124: 38-9.
10 Moss F. Vanaf 31 december 1992 bijsluiter verlpicht ook bij uitponden. Pharm Weekbl 1993: 128: 20-1.
11 Trier AAThM van. Wetenschapsbeleid. In: Wetenschapsvoorlichting, achtergronden, theorieen, praktijk. Katus J. en Wiedenhof N (eds) pp 53-64. Amsterdam: Intermediair, 1980.
12 Daldrup L. Wie populariseert waarom? (pp 25-42) In: Handboek Wetenschaps- & Technologievoorlichting. Willems J, Woudstra E (red). Groningen: Martinus Nijhof Uitgevers, 1993.
13 Dekkers AFM. Wetenschapsvoorlichting als grondrecht. In: Wetenschapsvoorlichting, achtergronden, theorieen, praktijk. Katus J. en Wiedenhof N (eds) pp 77-88. Amsterdam: Intermediair, 1980.
14 Stichting Publieksvoorlichting over Wetenschap en Techniek (PWT). Wetenschap voor een breder publiek. Advies uitgebracht op verzoek van Ministers Onderwijs en Wetenschappen en van Economische Zaken. Utrecht: PWT, 1990.
15 De Bruin J, Cramer J. Wetenschapstransfer (pp 115-127). In: Handboek Wetenschaps- & Technologievoorlichting. Willems J, Woudstra E (red). Groningen: Martinus Nijhof Uitgevers, 1993.
16 Bax J. Wetenschapsvoorlichting als overheidszorg (pp 129- 135). In: Handboek Wetenschaps- & Technologievoorlichting. Willems J, Woudstra E (red). Groningen: Martinus Nijhof Uitgevers, 1993.
17 Van den Broecke M (1993). A European's private understanding of science and technology: a personal mini-history of dilemmas (p113-117). In: Science and culture in Europe. J.Durant, J, Gregory (ed). London, Science Museum, 1993.
18 Nelkin D. Selling science. W.H Freedman and Company. New York: 1987
19 Patterson J. A Q study of attitudes of young adults about science and science news. Journalism Quarterly 1982;59:406-13.
20 Hanssen LSAM. Wetenschap in de krant. In: Wetenschap in woord en beeld. Utrecht: Stichting Publieksvoorlichting over Wetenschap en Techniek, 1991.

21 Hellmann M. Ausprägungen medizinischer Berichterstattung in Tageszeitungen. (pp127-147) In: Medizinpublizistiek. Prämissen - Praktiken - Probleme. Fisher H.D (Hrsg). Frankfurt am Mein: Verlag Peter Lang, 1990.
22 Jones G, Connell I, Meadows J. The presentation of science by the media. Primary Communication Research Centre. University of Leicester, 1978.
23 Kessler L. Women's magazines' coverage of smoking related health hazards. Journalism Quarterly 1989; 66: 316-133, 445.
24 Oudenrijn F. van den. Tijdschriften, een medium voor wetenschap en techniek? Scriptie Vakgroep Populariseren van Natuurwetenschappen, Katholieke Universiteit Nijmegen, Stichting PWT, Utrecht, 1991.
25 Rees AM. Characteristics, content and significance of the popular health periodicals literature. Bull. Med. Libr. Assoc. 1987; 75 (4): 317-322.
26 Dan BB. TV or not TV. Communicating health information to the public. JAMA 1992; 268: 1026-7.
27 Meadows AJ. Communication in science. London: Butterworths, 1974.
28 De Solla Price DJ. Little science, big science. New York: Colombia University Press, 1963.
29 Cuilenborg JJ van, Scholten O, Noomen GW. Communicatiewetenschap. Muiderberg: Dick Coutinho, 1992.
30 Willems J, Woudstra E. The use by biologists and egineers of non-specialists information sources and its relation to their social involvement. Scientometrics 1993; 28 (2): 205-16.
31 Phillips DP, Kanter EJ, Bednarczyl B, Tastad PL. Importance of the lay press of medical knowledge to the scientific community. New Engl. J. Med. 1991;325(16):1180-3.
32 Grupp G, Heider M. Non-overlapping disciplinairy vocubularies. (pp 28-36). In: Communication of scientific information. Day S.B. (ed). S.Karger A.G. Basel, 1975.
33 Fennell ML, Warnecke RB. The diffusion of medical innovations. New York/London: Plenum Press, 1988.
34 Denig P. Drug choice in medical practice. Rationales, routines, and remedies. Groningen: Denig, 1994.
35 Shaw DL, Van Nevel P. The informative value of medical science news. Journalism Quarterly 1967; 44: 548.
36 O'Keefe MT. The mass media as souces of medical information for doctors. Journalism Quarterly 1970;47:95-100.
37 Vander Stichele R, Heyvaert J, Van Royen P, De Smet E. De informatiekanalen van de Vlaamse huisarts. Huisarts nu 1985; 14 (5): 191-2.
38 Sturkenboom MCJM, De Jong-van den Berg LTW, Cornel MC, Stricker BHCh, Wesseling H. Communicating a drug alert - a case study in the Netherlands- Eur J Clin Pharmacol 1994;47: 125-132.
39 Connel CM, Crawford CO. How people obtain their health information- a survey in two Pennsylvania counties. Public Health Reports 1988; 103 (2): 189-195.
40 Wright WR. Mass media as sources of medical information. J Communication 1975; 25: 171-3.
41 Johnson JD, Meischke H. Cancer information: Women's source and content preferences. J. Health Care Marketing 1991; 11 (1): 37-44
42 Jong- vd Berg LTW de, Haaijer-Ruskamp FM, Trigt AM van. Evaluatie van een voorlichtingsbrochure over geneesmiddelen en de overgang. Pharm. Weekbl.1989; 124: 870-876.

43 Jong- vd Berg LTW de, Waardenburg C. Geneesmiddelengebruik tijdens de zwangerschap. Styx Publications, Groninggen, 1991.
44 Visser TJ. Geneesmiddelenvoorlichting. Een overzicht. Leiden: Instituut voor Huisartsgeneeskunde en Wetenschapswinkel RU Leiden, 1989.
45 Anonymous. Dat slikken we allemaal. Margriet 1984: 76-84.
46 Sandman PM. Medicine and mass media: an agenda for physicians. Annals of Internal Medicine 1976: 85: 378-383
47 Centraal Bureau voor de Statistiek. De leefsituatie van de Nederlandse bevolking, 1993. 's Gravenhage: SDU Uitgeverij, 1994.
48 Giesbers N, Schaapsmeerders F, Schretlen I. Medische informatie in de media. Medisch Contact 1977;32 : 1507-1514.
49 Stappers JG, Reijnders AD, Möller WAJ. De werking van de massamedia. Een overzicht van inzichten. Amsterdam: Uitgeverij De Arbeiderspers, 1990.
50 McQuail D. Mass communiation theorry: an introduction. London: Sage, 1987.
51 Wellings K. Help or Hype: An analysis of media coverage of the 1983 "Pill scare". In: DS. Leather, GB. Hastings, K. O'Reilly, JK. Davies (ed). Health education and the mass media II. Oxford: Pergamon, 1986: 109-115.
52 Jones EF, Beniger JR, Westoff CF. Pill and IUD discontinuation in the United States, 1970-1975: the influence of the media. Family Planning Perspectives 1980; 12 (6): 293-300.
53 Soumerai SB, Ross-Degnan D, Spira Kahn J. Effects of professional and media warnings between aspirin use in children and Reye's syndrome. The Milbank Quarterly 1992; 70 (1): 155-182.
54 Carrocci NM. Diffusion of information about cyanide-laced tylenol. Journalism Quarterly 1985;62: 630-3.
55 Oudkerk RH. Wat merkt de huisarts. Nederlands Tijdschrift voor Obstetrie & Gynaecologie 1991; 104: 316- 319.
56 Haspels AA. Arts en Media. Nederlands Tijdschrift voor Obstetrie & Gynaecologie 1991; 104: 328.
57 Sneader W. Drug development: from laboratory to clinic. Chicester: John Wiley & Sons, 1986 (pp99-104).
58 Schneider PJ, Perry PJ. Triazolam - An "abused drug" by the lay press. DICP, The annals of pharmacotherapy 1990: 24: 389-92.
59 Hume SE. Mass voluntary immunization campaigns for meningococcal disease in Canada: Media hysteria. JAMA 1992; 267(13): 1833-8.
60 Pfund N, Hostadter L. Biomedical innovation and the press. Journal of Communication 1981;31: 138-154.
61 Hecht F, Hecht B. The New York Times:"All the news that's fit to print" about medicine and science. Cancer Genet Cytogenetic 1992; 62: 92-3.
62 Rabins PV. Science and medicine in the spotlight: Alzheimer's disease as an example. Perspectives in Biology and Medicine 1988; 31 (2): 161-170.
63 Smith R. Hype from journalists and scientists. BMJ 1992; 304: 730.
64 Leufkens HMG. Premature or inappropriate publication of research findings. Am.J. Pharmaceutical Education 1994; 58: 95-97.
65 Green PJ. Publicity and unpublished results.[letter] Lancet 1992;339: 556.
66 Koren G, Klein N. Bias against negative studies in newspaper reports of medical research 1991; 266 (13): 1824-6.
67 Galjaard H. Publieksmedia en gezondheids zorg. Ned Tijdschr Geneesk 1992; 135 (27): 1309-1313.
68 Greenberg M, Wartenberg D. Newspaper coverage of cancer clusters. Health Education Quarterly 1991; 18 (3): 363-374.

69 Freimuth VS, Greenberg RH, DeWitt J, Romano RM. Covering cancer: Newspapers and the public. J Communication 1984; 34: 62-73.
70 Kristiansen CM. Newspaper coverage and actual mortality statistics. European J Social Psychology 1983;13: 193-4.
71 Crandall RL. Research funding and the media. JAMA 1991; 266 (9): 1279, 1282.
72 Chrisler JC, Levy KB. The media construct of a menstrual monster: A content analysis of PMS articles in the popular press. Women & Health 1990; 16 (2): 89-104.
73 Commissaris CJAM. Dementie en geheugen in de dag- en weekbladpers: een analyse van kranteknipsels over de periode 1987-1990. Tijdschr Gerontol Geriatr 1991; 22: 21-7.
74 Ridout S, Waters WE, George CF. Knowledge of and attitudes to medicines in the Southampton community. J. Clin. Pharmac. 1986; 21: 701-12.
75 Joubert P, Lasagna L. Patient package inserts I: Nature, notion, and needs. Clin. Phhram. Ther. 1975:507-513.
76 Shoemaker P, Reese D. Mediating the message. New York: Longman, 1991
77 McQuail D, Windahl S. Communication models for the study of mass communication. London, Longman, 1981.
78 Shoemaker PJ. Gatekeeping. Newbury Park: SAGE Publications, 1991.
79 Nelkin D. Selling science: how the press covers science and technology. Communicating Science to the public (pp 100-113). Chicester: Wiley, 1987.
80 Willems J. Persberichten hebben doorgaans (zeer) laag rendement. Massacommunicatie 1990;18(3):232-239.
81 Soutoul P. L'information médicale continue du grand public en matière de reproduction humaine. Diss. Faculté de Medecine de Tours, Université François Rabelais, 1985.
82 Gandy OH. Beyond agenda setting: Information subsidies and public policy. New Jersey, ABlex Publishing Company, 1982.
83 Squires BP. Keeping ahead of the media. Can Med Assoc J 1990; 142(9);919
84 Angell M, Kassirer JP. The Ingelfinger-rule revisited. N. Engl. J. Med 1991; 325(19): 1371-1373.
85 Relman AS. The Ingelfinger rule. N. Engl. J. Med. 1981; 305 (14): 824-6.
86 Dibella S, Ferri AJ, Padderud, AB. Scientists' reasons for consenting to mass media interviews: A national survey. Journalism Quarterly 1991; 68: 740-9.
87 Anonymous. Overheid dwingt farma-industrie tot rechtstreekse benadering publiek. Bijsluiter 1991;8(4):7
88 Steinbrook R, Lo B. Informing physicians about promising new treatments for severe illnesses. JAMA 1990;263(15):2078-82.
89 European Federation of Pharmaceutical Industries' Associations. European Code of Practice for the Promotion of Medicines. EFPIA, Brussel, 1992.
90 Lexchin J. Pharmaceutical promotion in Canada: Convince them or confuse them. Int. J. Health Services 1987;17(1):77-89.
91 Nelkin D. How to doctor the media. New Scientist 1986 (november 20): 51-6
92 Staab JF. The role of news factors in news selection: a theoretical reconsideration. European J Communication 1990;5: 423-43.
93 Galtung J, Ruge MR. The structure of foreign news. Journal of Peace Research 1965;2: 64-91.
94 Stappers JG, Reijnders AD, Moller WAJ, Hesp LAThM. Wetenschap als gemeengoed: een studie van de wetenschapsvoorlichting in Nederland. Staatsuitgeverij, 's Gravenhage, 1983.

95 Winnubst M. Wetenschapspopularisering in Vlaanderen. Katholieke Universiteit Leuven. Faculteit der Sociale Wetenschappen. Departement Communicatiewetenschap, 1990.
96 Willems JThJM. Wetenschapsjournalistiek. Klachten en communicatiebarrieres. Proefschrift Katholieke Universiteit Nijmegen. Nijmegen, Gelderlander Pers, 1976.
97 Langley C. Is there a need for reliable sources of scientific information. Science Communication in Europe. A report from the Ciba Foundation Discussion Meeting, (London:Ciba Foundation), 1991: 74-7.
98 Cameron SM. Medicine and the microphone: using the media to teach our patients. Can Med Assoc J 1991; 144 (4): 476-477.
99 Pulford DL. Follow up study of science news accuracy. Journalism Quarterly 1976; 53: 119-121.
100 Tankard JW, Ryan M. Newssource perceptions of science coverage. Journalism Quarterly 1974;51: 219-225, 334.
101 Willems J, Van Oostrum I. Medische informatie in de pers. Medisch Contact; 1985; 40 (27): 809-812.
102 Dunwoody S, Ryan M. The credible scientific source. Journalism Quarterly 1987: 64: 21-7.

Chapter 2

SOURCES OF IDEAS AND INFORMATION[1]

Abstract

In this chapter we describe from which sources science writers who write about medicines in daily newspapers get their ideas and information. This study was undertaken because mass media, and therefore newspapers, can play an important role in the diffusion of information about medicines. Two approaches, interviews and a content analysis, were used to answer the research questions. Both methods show the importance of professional medical journals and information from universities and their hospitals as sources of ideas and information. Although the pharmaceutical industry did not seem to play a role as source of ideas and information according to the journalists, it is the third most frequently cited source of information in the newspaper articles. To gain a better insight in the role of the pharmaceutical industry as source of ideas and information for newspaper journalists further research is necessary.

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2.1 INTRODUCTION

The general public as well as health professionals may use many different sources of information about health, illness and medicines. Study results show that family magazines and daily newspapers not only play a role as source of medical information for the general public [1-3], but inform physicians and other groups of health professionals as well [4-6]. Medical news, including news about drugs, is an important category within the area of science news as a whole. In the Netherlands about 25% of the science news in the daily newspapers concerns medical topics [7].

Science correspondents writing articles can make use of various sources. Science correspondents' major sources of information have shown to be scientific journals and personal contacts with scientists [8-10]. Sometimes, information from scientific meetings is viewed as useful. In general, the industry of science and technology does not seem to play an important role, according to Jones et al. [8]. However, the pharmaceutical industry is increasingly interested in informing the public through the media. In the Netherlands, pharmaceutical companies, as in many countries, have agreed to a code embodying the principle that they shall not advertise for prescription drugs to the general public [11], but it is clear that companies will seek to pass on certain messages to a mass audience. In particular, one sees that pharmaceutical companies in various countries seek to gain the interest of the mass media journalists [11-14]. For this reason, we believe that, contrary to the findings of Jones et al. [8], who studied general science writers, for reporters who write about medicine, the pharmaceutical industry does play a role as news source when the issue is medicines.

In view of the above it is relevant to understand how science correspondents who write about medicines get their information. Where do they get the ideas from and where do they get information? In the present study we have focused on the journalists working for newspapers. We excluded T.V. reporters because little attention is paid to (medical) science news on Dutch television [15].

2.2 METHODS

Two approaches were used in order to find out which sources journalists employ to get ideas ("idea sources") and from which sources they obtain information ("information sources") on the

chosen topics. Firstly, two indepth interviews were conducted with journalists who write about medicines. Secondly, a content analysis was undertaken of newspaper articles in which medication was mentioned.

Because we used interviews there was a possibility we might receive socially desirable answers. Content analysis of articles published in the media employing the journalists concerned, can solve this problem to a considerable extent. Interviews are needed to collect information about the sources of ideas. Furthermore, an interview was needed in order to understand the reasons for using particular sources and for mentioning or not mentioning sources in articles, etc.

The seven journalists interviewed in this study, were selected by screening articles on medicines and noting their authors in four national and two regional daily newspapers. The journalists most often named as authors of articles on medicine were approached for the study. All seven of them participated in the first interview; one respondent did not participate in a second interview.

The circulation of the dailies, the respondents work for accounts for ca 42% of the total circulation of all Dutch dailies. The newspapers, which these journalists work for were, included in the content analysis, except for one regional newspaper. In fact, regional newspapers do not devote much attention to science news in general [7], but it was considered wise to carry out a content analysis on one of them. Within the category national newspapers, we subdivided papers in quality newspapers and popular newspapers [16].

Interviews

During these interviews we asked two questions about the sources of ideas, one open ended question and a question in which the importance (on a four point scale) of the different idea sources was asked. Furthermore we asked questions about the sources of information, especially information sources used when a new drug becomes available and the reasons for using particular sources. Special attention was devoted to the scientific and professional medical literature, because several studies show that this is an important source for science correspondents [8-10,17]. Questions were asked about the journals to which they have access, the journals they use and the way they use different types of publication. We also paid special attention to the pharmaceutical industry as a source, because of the increasing interest of companies in the media. Furthermore we talked with the journalists about their training and experience in journalism.

Content analysis

All articles were selected in which medication of some sort was discussed and which had appeared over a period of 4 months (June - September 1991) in five daily newspapers. However, articles on drug policy were excluded because the journalists who were interviewed indicated that they themselves do not write articles on this topic, which is covered by other colleagues.

The articles were coded on several topics. First of all we differentiated between stories from news agencies (N.A.stories) appearing in the papers and stories written by the staff or by freelance journalists (original stories). The N.A. articles were excluded from the analysis because we wanted to compare the results of the content analysis with those of the interviews.

Furthermore we coded the sources mentioned and informants mentioned in the article. We distinguished between the following possible sources: (1) scientific or medical journals; (2) information coming from Dutch universities and university hospitals, e.g. information from dissertations or information coming from university researchers; (3) the pharmaceutical industry; (4) information from scientific meetings; (5) and other sources mentioned in the article. Whenever more than one source was mentioned in the article we coded the different sources, with a maximum of four sources per article.

Whenever a scientific or professional medical journal was mentioned as source of information we tried to find the original article, categorizing this as an original article, editorial, letter or review.

We coded the pharmaceutical industry as a source whenever a particular company or the pharmaceutical industry in general were mentioned in an article. For those cases in which it seemed that the information could have come from a company directly, we called the company and checked whether the firm had initiated contact with the press.

2.3 RESULTS

Results of the interviews

The journalists. The length of experience in journalism of the various writers interviewed varied from 6 to 37 year. The journalists' training was also diverse. Only one journalist had followed a special course in science journalism. Three of the respondents had been to university and studied political sciences, chemistry and biology respectively. Only one of the journalists contributed items other than medical news.

Idea sources. All the journalists reported the use of professional medical journals and press releases from pharmaceutical companies as sources of ideas for articles about drugs. Other newspapers also seemed to play a role as source of ideas, as did the press releases from universities and university hospitals and items from news agencies. Some journalists also mentioned scientific meetings, press releases from government institutions and personal contacts with researchers as possible source of ideas.

We also asked a question about the importance attached to the different idea sources. Again the professional medical journals appeared to be viewed as the most important sources of ideas, followed by press releases from universities and university hospitals. Although all the journalists mentioned the press release from pharmaceutical industries as idea source they did not seem to attach much importance to them. This is illustrated by the following remark: "They already sent us too many press releases about drugs which they consider to be major importance breakthroughs but which in fact were simply me-too drugs - not even innovations".

A reason for the importance of the journals the journalists mentioned is the Ingelfinger rule which most journals subscribe to. 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. This rule was promulgated to protect the New England Journal of Medicine from publishing material that had already been published and thus had lost its originality. Ingelfingers' successor, Relman, maintained this policy, and saw it as a way to discourage public announcement of research findings before publication in a scientific journal, as well as to discourage the growing practice of redundant publication [18]. According to some of the journalists this rule on occasion impeded them in the free gathering of news. The remaining journalists found this rule of some importance because it provides some guarantee that an item can be regarded as new.

Other daily newspapers were mentioned by all but one journalist. They were not considered to be very important as source of ideas. All the journalists read other national daily newspapers, some read also foreign ones, because they wanted to know what their colleagues - or as some put it their rivals - were writing about. Another reason is, as one of the respondents indicated:"..if another brings some medical news in a big way I have to follow and write an article on that subject as well."

Table 1
Function of sources

Source	Function	
	Idea	Information
Scientific journals	+	+
Press releases universities	+	-
Press releases pharmaceutical industries	±	±
Personal contacts with researchers	±	+

Information sources. Professional medical journals were also very important as a source of information (Table 1). Two reasons were given: (1) the most important developments are described in the journals and (2) the research that is reported is peer-reviewed prior to publication by experts giving the journalist a reasonable guarantee that the study has been performed properly and conclusions are drawn correctly. Two journalists, however, indicated that a peer-review system is not always waterproof citing disputes involving the work of the Dutch professor Buck[1] and the French professor Benveniste.[2] Another journalist saw also a positive facet of a peer-review system less strict providing a chance for highly controversial studies to be published citing precisely the paper by Benveniste in Nature.[2]

The independence of a journal was important to most of the journalists. Independence, however, is not always guaranteed, since sometimes supplements are financed by pharmaceutical companies. For this reason one journalist omitted all supplements as a source of information.

Press releases from universities and university hospitals, though important as a source of ideas, were not important as a source of information. According to the journalists they contain insufficient information. If a journalist gets an idea from a press release, he or

1 Buck. In April 1990 professor Buck and his colleagues announced at a press conference a major breakthrough in the AIDS research. The day after this press conference the results were published in Science. However, later this month there were doubts about the stability and purity of the substance used in the experiments. A year later, a research committee observed shortcomings and mistakes in the planning of the research, the interpretation of the results and their presentation in the Science article.

2 Benveniste. In Nature in June 1988 a article about experiments with highly diluted solutions written by Dr. Benveniste and his colleagues was published. This article was accompanied by an editorial reservation in which the editorial board announced a repetition of the experiments in the presence of three independent investigators. Although many referees commented on the article and expressed their doubts, the article was published. The independent investigators concluded in July 1988 that the claims made in the article were not to be believed for several reasons.

she has to contact the researcher in order to collect enough information for writing an article.

Pharmaceutical companies were not considered to be important sources for drug information in general. As one respondent said "You bear in mind the fact that pharmaceutical companies have a commercial interest in getting stories about their products in the newspapers". However, when a new drug is registered or becomes available the major source of information is the pharmaceutical company that produces that particular drug. When a new drug is "discovered" scientific journals like Nature and Science play an important role. Sometimes the journalists received information from researchers in universities or hospitals about new drugs. The respondents indicated that researchers in universities and medical specialists are also important as sources of information about drugs in general, especially to check information.

The information sources used to write an article are not always mentioned in the article itself. Reasons to mention a source are: (1) when the source is an authority and is the reason for selecting the information so that the article derives its newsworthiness from the source; (2) to enable the reader to look up the original material on which the article is based; (3) to enable the reader to make up his own mind about the reliability of the source and the information presented in the article. The main reason for not mentioning (all) sources was making an article unnecessarily difficult to read. Other reasons were that a particular source does not mean anything to the reader, or that too many sources were used to mention them all.

Scientific and professional medical journals. Because the scientific and professional medical journals were expected to be a major source of ideas and information, we also asked the journalists to which journals they have access. The journals listed in Table 2 were also described by the journalists as those which were important for collecting information about drugs. Besides international scientific and professional medical journals, all the journalists read at least two Dutch medical or pharmaceutical journals. Almost eve-

Table 2
International medical and scientific journals (n=7).

	Number of journalists having access
New England Journal of Medicine	6
Science	6
Nature	5
The Lancet	4
British Medical Journal	3

ryone read a popular science journal (e.g. *New Scientist*). Besides the direct access which the journalists have to international journals, the wire services from press agencies are active in screening the journals and supplying the journalists with information from these same sources. Furthermore several pharmaceutical companies send press releases whenever an international scientific or medical journal publishes a study concerning one of their products.

Because the journalists did not mention any French or German journals, we asked whether they did not read those journals and if not, for what reason. They did not read these journals because as they said all important studies would appear in the English or American literature. Three journalists indicated to have problems in reading French articles, especially scientific studies.

The respondents valued sections within a journal differently. Almost all journalists valued editorials very highly. They appreciated an editorial about a research article because it told them something about the value attached to the study and placed the study in a context. One respondent indicated that the importance of a study is underlined whenever an editorial is written about it. Most journalists keep review articles in their files to use whenever they are going to write a major article on the subject. Seldom does a review article, however, provide a reason for writing an article. Only on rare occasions did they make use of letters to the editor, they indicated that whenever an interesting discussion arose on a particular subject these letters could be useful. For different journals, however, this section is valued differently. A letter in Nature is considered to be of more importance than a letter in a Dutch journal. The identity of the author of a letter can also make a difference.

Universities and university hospitals. All respondents received press releases from the different universities and university hospitals in the Netherlands. They also received agendas in which the dissertations are mentioned. According to some journalists certain universities were more active in informing the press than others. One respondent suggested that an active role of the information service can lead to more attention. The journalists working for the regional daily newspapers paid special attention to the universities in the area. The journalists working for the national newspapers reported no preference for any specific university. They chose to write an article whenever a subject interested them. Theoretically some universities or hospitals may receive more attention because of their research topics.

Pharmaceutical industry. The pharmaceutical companies were reported to approach journalists in various ways. Sometimes they hire a public relations firm to establish press contacts. Several industries send their own magazines to the journalists; for example six of the seven respondents received Janssen News, published by the drug company of that name. Besides these magazines the journalists received press releases and phone calls to invite them to press conferences and national or international scientific meetings. These press releases point to official approval for marketing of new drugs, as well as to publications in international professional medical journals, concerning the firms' products. Usually, such an announcement is accompanied by a copy of the publication. The journalists indicated that Schering sends them approximately once a month a study published in an international journal with a translation or abstract in Dutch and a comment by a Dutch expert.

The journalists expressed a critical attitude towards information coming from the pharmaceutical industry. They are aware of the reason why the pharmaceutical industry sends them information. Furthermore two journalists indicated wariness of information bias in this material. The information may be "good", but often represents an one-sided view.

Results of the content analysis

Over a period of four months a total of 207 articles were found. Of these 178 articles were classified as original articles; this accounted for approximately 86% of all the articles on drugs that appeared during that period. This percentage did not differ over the different types of newspapers.

Information sources in newspaper articles. In 45 of the 178 articles the journalist referred to a publication in a scientific or medical journal. In 39 articles there was a reference to a researcher at a university or hospital or to a research project in progress or to be initiated at a university.

In 32 articles the name of a pharmaceutical company or association was mentioned (figure 1). A consumer organization was cited in 11 articles.

Articles in the two popular newspapers accounted for 51% of all articles found in the four month period in five daily newspapers. Universities were the most frequently cited source in popular newspapers whereas scientific journals was the most frequently cited source in the quality and the regional newspapers.

In 72% of the articles in which a pharmaceutical company was mentioned one or two other sources were cited. This proportion falls to 36% when a scientific journal is mentioned and 31% where

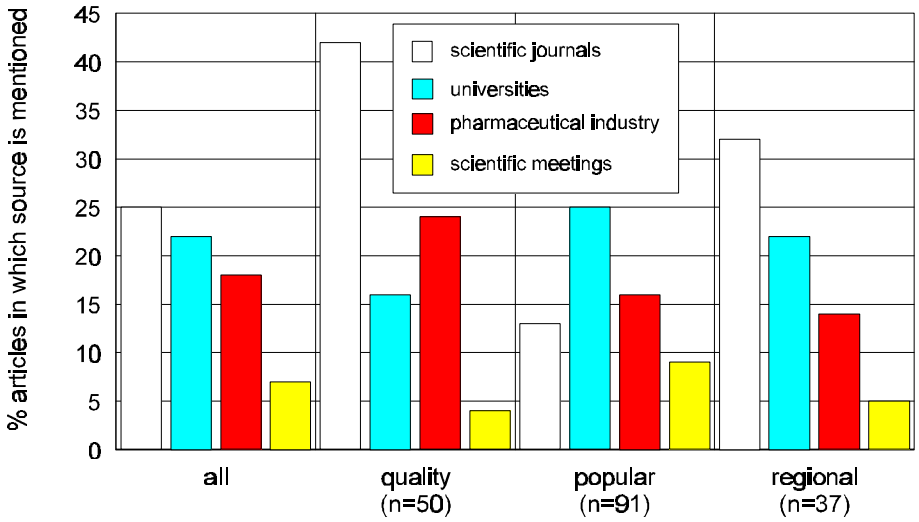

Figure 1
Sources in articles (n=178)

the source mentioned is a researcher from a university or a university itself. When information from a pharmaceutical company is used another source is thus more commonly used and mentioned as well (Chi-square, $p < 0.05$).

British and American journals were more often mentioned than Dutch journals. The *New England Journal of Medicine* was the most often cited journal (see Table 3).

Table 3
Scientific and professional medical journals mentioned in articles (n=45)

Journal	Times mentioned
New England Journal of Medicine	17
The Lancet	11
Nature	4
British Medical Journal	2
Dutch journals	6
Other journals	6
Total	46

In one article two different scientific journals were mentioned

Comparison of interview data and content analysis

Both methods show the importance of professional medical journals and information coming directly from universities and their hospitals as sources. Although the pharmaceutical industry did not seem to play an important role as a source of ideas according to the journalists, it is the third most frequently cited source of information in the articles in the newspapers. In order to explain this difference we analyzed the articles in which a pharmaceutical company was mentioned further. For twelve articles we did not gather information about press activities of the company. In five

articles no specific company was mentioned and one company could not be traced. Six other articles were excluded because of the negative attitude of the author towards the company; those articles could not have been initiated by press activities of the company. With respect to 20 articles we were able to get information about relevant press activities of the company. Ten articles may have been initiated by press activities of a company because press releases were sent or a press conference was organized. In six other articles a spokesman of a company was cited; in these articles the company also served as source of information.

These results suggest that the way in which we coded the pharmaceutical industry in the content analysis may lead to an overestimation of the frequency of the companies' role as source of information. On the other hand in the period studied 11 original articles were found about the introduction of three new drugs. The three producers of these drugs had organized press conferences. In seven of the eleven original articles the company is mentioned and coded as source of information. In four articles the company is not mentioned, although the articles were published the day after the press conference. This suggests an underestimation of the role of the pharmaceutical industry as source.

In both the interviews and the content analysis the *New England Journal of Medicine* is the journal most often mentioned. Because the journalists stressed the importance of an original article accompanied by an editorial we checked for the *New England Journal of Medicine* and *Lancet*articles which were used as sources to determine whether they were accompanied by an editorial. Of these 28 articles 24 have been traced of which 15 (62%) were published together with an editorial.

On a basis of the interview results we expected a difference in citing sources in articles, in particular the mentioning of scientific journals was expected to be less frequent in popular newspapers than in quality newspapers. This hypothesis was confirmed. In 42% of the articles in the quality newspapers a scientific journal was mentioned as source, whereas in only 13% of the articles in the popular newspapers this was the case (Chi square, p 0.01). The regional newspaper seems to be somewhere in between (see Table 3). On this point we must stress the fact that not mentioning scientific journals in an article does not mean that articles from scientific journals are not used to prepare or write an article for a popular daily newspaper.

2.4 DISCUSSION

Because medical news is an important category within the general field of science news, and since people are known to use newspapers as a source of information on drugs, we investigated the sources used by medical journalists. In our study we differentiated between idea source and information source because they serve different functions within the process of making news. The results show that there is a difference between idea sources and information sources.

As other studies [8-10,17] have shown, the scientific community is an important source of ideas and information, both directly through personal contacts with researchers and indirectly through scientific and professional medical journals and press releases. Journalists seem to prefer the indirect contact with the professional community provided through journals partly because of the peer review system which the journals use, which gives the journalist some guarantee of reliable results and conclusions. Journals are chosen not only simply for the research they contain, but also for their editorial comments. The study supports the findings of Jones [8]. Journalists pay special attention to research articles which are accompanied by editorials because an editorial places such a study in a context and in effect indicates to the journalist the importance of the study done.

The journals used by the journalists have high impact factors and are widely considered, within the scientific community, to be among the most important in their field.

Indirect contact with the research community through press releases from universities and university hospitals seems less important as sources of information but more important as sources of ideas. The journalists indicate that the press releases draw their attention to some subjects but seldomly contain enough information to be used as sources of information. Stappers [19] who interviewed science writers in the Netherlands also found an alerting function for press releases from universities.

The pharmaceutical industry seems to be an important source of ideas and information about new drugs. This in contrast to the findings of Jones [8] who found the industry less important as an initial source for science writers. This difference may be due to the fact that Jones [8] studied general science writers while we limited our respondents to medical journalists. Our results are comparable to those of Soutoul [9]. She surveyed French medical journalists about their sources of information and found the industry to be

the sixth most frequently cited source. More important then the pharmaceutical industry in her work are for example consumer organizations [9]. When we compare our research findings with those of Soutoul we have to keep in mind that we asked the journalists especially about their idea- and information-sources on drugs whereas she asked her respondents about sources of medical information in general. Furthermore, we excluded articles on drug policy; it is our impression that in articles about drug policy consumer organizations do play a role as sources of information.

Despite the role of the pharmaceutical industry as source of ideas and information, the journalists claim to have a critical attitude. The companies supply the journalists with information in several ways: press releases, conferences, telephone calls etc. It is interesting to notice how they try to meet the need of the journalist, to have his story based on an independent source by sending copies of articles in scientific journals about their products. The journalists claim to remain critical because they seem to realize that the view and information from the pharmaceutical industry may be one-sided. The information which companies send may be good but one never knows what information is withheld. This sceptical attitude is confirmed by the results of the content analysis. Whenever a pharmaceutical company is mentioned in an article another source is often mentioned too.

In general, the results of the interviews seem to be confirmed by the results of the content analysis. However a few remarks have to be made about this comparison. The comparison on the level of the information sources is not completely exact because, as indicated by the journalists, not all the information sources are always mentioned in the articles. It is understandable that only the most important sources and the most influential ones are mentioned; since the source can make a story newsworthy, it is possible that sources like the New England Journal of Medicine are overrepresented in the content analysis. Whenever this journal is used it is mentioned in an article as opposed to a Dutch journal which may be considered to be less authorative.

The difference between the results of the content analysis and the interviews regarding the role of the pharmaceutical industry my have been due to the way the pharmaceutical industry was coded in the content analysis. On the other hand this difference may have been caused by socially desirable answers in the interviews.

To gain a better insight in the role of the pharmaceutical industry as a source of ideas and information for newspaper journalists

further research is necessary. To overcome the difficulties of an interview with its inherent possibility of bias, one could envisage a study in which all the material which a journalist obtains from universities, pharmaceutical companies and other sources is analyzed and compared to newspaper articles that appear during that period. Another possibility is a study in which medical journalists are observed during their work. Such work has been undertaken in another field of journalism by Gans [20], but it is clearly labour-intensive and time-consuming.

REFERENCES

1 Jong- vd Berg L.T.W. de, Haaijer-Ruskamp F.M, Trigt A.M. van. Evaluatie van een voorlichtingsbrochure over geneesmiddelen en de overgang. Pharm. Weekbl. 1989; 124: 870-876.
2 Jong- vd Berg L. de, Waardenburg C. Geneesmiddelengebruik tijdens de zwangerschap. Groningen: Styx-publications, 1991.
3 Visser T.J. Geneesmiddelenvoorlichting. Een overzicht. Leiden: Instituut voor Huisartsgeneeskunde en Wetenschapswinkel RU Leiden, 1989.
4 O'Keefe M.T. The first human heart transplant-A study of diffusion among doctors. Journalism Quarterly 1969; 46: 237-242.
5 O'Keefe M.T. The mass media as souces of medical information for doctors. Journalism Quarterly; 1970; 47: 95-100.
6 Phillips D.P, Kanter E.J, Bednarczyl B, Tastad P.L. Importance of the lay press of medical knowledge to the scientific community. New Engl. J. Med. 1991; 325(16): 1180-3.
7 Hanssen L.S.A.M. Wetenschap in de krant. In: Wetenschap in woord en beeld. Utrecht: Stichting Publieksvoorlichting over Wetenschap en Techniek, 1991.
8 Jones G, Connell I, Meadows J. The presentation of science by the media. Leicester: Primary Communication Research Centre. University of Leicester, 1978.
9 Soutoul P. L'information mdicale continue du grand public en matire de reproduction humaine. Diss. Facult de Medecine de Tours, Universit Franois Rabelais, 1985.
10 Willems J. Persberichten hebben doorgaans (zeer) laag rendement. Massacommunicatie: 1990; 18(3): 232-239.
11 Anonymous. Overheid dwingt farma-industrie tot rechtstreekse benadering publiek. Bijsluiter 1991; 8(4): 7.
12 Moser M, Blaufox M.D, Freis E, et al. Who really determines your patients' prescriptions? JAMA 1991; 265 (4): 498-500.
13 Lexchin J. Pharmaceutical promotion in Canada: Convince them or confuse them. Int. J. Health Services 1987; 7(1): 77-89.
14 Nelkin D. How to doctor the media. New Scientist 20 nov 1986.
15 Hendriks E, Willems J. Wetenschap op de Nederlandse tv. In: Wetenschap in woord en beeld. Utrecht: Stichting Publieksvoorlichting over Wetenschap en Techniek, 1991.
16 Kaiser A. Een wereld van papier. Werkwijze en uiterlijk van de Nederlandse krant. In: Media in Nederland. (6th edition, edited by J. Bardoel and J. Bierhoff). Groningen: Wolters Noordhoff, 1990.

17 Winnubst M. Wetenschapspopularisering in Vlaanderen. Katholieke Universiteit Leuven. Faculteit der Sociale Wetenschappen. Departement Communicatiewetenschap, 1990.
18 Angell M, Kassirer J.P. The Ingelfinger-rule revisited. N. Engl. J. Med 1991; 325(19): 1371-1373.
19 Stappers JG, Reijnders AD, Moller WAJ, Hesp LAThM. Wetenschap als gemeengoed: een studie van de wetenschapsvoorlichting in Nederland. 's Gravenhage: Staatsuitgeverij, 1983.
20 Gans H. Deciding what's news. New York: Random House, 1979

Chapter 3

SETTING THE AGENDA

DOES THE MEDICAL LITERATURE SET THE AGENDA FOR ARTICLES ABOUT MEDICINES IN THE NEWSPAPERS?[1]

Abstract

The source of ideas and information on medicines most important to journalists in the Netherlands, and most commonly consulted by them, is known to be the scientific medical literature. In this chapter we therefore, explored the relation between the kind of medicines discussed in the scientific medical literature and those discussed in newspapers. A content analysis of scientific medical journals was combined with a content analysis of Dutch daily newspapers. The results show an agreement in the main groups of medicines discussed in the scientific medical literature and newspapers. In both the newspapers and the professional journals anti-infective medication and drugs for the central nervous system are the groups of medicines most frequently discussed. Although it has been suggested that "bad news" is more newsworthy then "good news", the negative consequences of the use of medicines received proportionally more attention in the professional literature than in the newspapers.

1 Social Science & Medicine (in press)

3.1 Introduction

For most people the reality of science is what they read in the press [1]. That "reality" may or may not be in accordance with the actual facts; one of the concerns within the scientific community seems to be that science reporting in the mass media does not portray the reality of scientific research or of current developments and concerns in the scientific community. Some topics are overemphasized, while others receive no media attention at all. In newspapers science news is dominated by news about medicine [2-4]. Critics argue that sometimes reports in the newspapers about new treatments raise false hopes. Too often health news is unbalanced by overly optimistic reports of miracle medical technology while little or no attention is devoted to the costs, complications and problems of access of new modes of health care [5-6]. Some diseases receive proportionally more media coverage than others, although they may be rare and have a low(er) incidence [7-8]. Such media reporting may even influence the funding of research projects. 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 [9].

Journalists themselves obviously decide what is written about science and medicine in the newspapers and which topics receive particularly emphasis. However, science journalists receive a vast amount of information which is provided spontaneously by others, for example in the form of press releases. They also consult their own sources in making choice of material. The nature of the sources which journalists themselves consult can however itself have a considerable influence on what is to become news; one topic may for example be so prominent in the source material that it is unlikely to be ignored, while another may be hidden unless one digs assiduously to find it. It is from al this information, provided by others or deliberately hunted down, that journalists select their topics, set their priorities and acquire their specific facts.

The source of ideas and information most important to medical journalists[1] in the Netherlands, and most commonly consulted by them, is known to be the scientific medical literature [10]. Journalists are known to select topics from the journals they read using the following criteria: the scientific relevance of the topic, the number of people likely to be personally affected by the topic, their own interest, and the topicality of the subject [11]. It is reasonable

1 These medical journalists are specialized science journalists

to hypothesize that the scientific relevance of a topic perceived by a journalist increases with the number of publications devoted to that subject in the scientific medical literature. One would then expect to find that there is, by and large, a parallel between emphasis devoted to particular matters in the scientific medical literature and the emphasis which these topics receive in the newspapers. In other words, we might well expect the scientific medical literature to set the agenda for the newspapers.

Agenda-setting research was originally focused on the public agenda and assumed a relation between the mass media agenda and the public agenda. According to McCombs, one of the earliest contributors to the field of agenda-setting, in the 1980s, the original question "Who sets the public agenda?" was rephrased into "Who sets the news agenda?". Agenda-setting research transformed the news agenda from a independent variable to a dependent variable [12] (see figure 1).

Figure 1
The relation between the scientific agenda, the newspaper agenda and the public agenda

In this study, which focused on medicines, we look at the newspaper agenda as dependent variable and investigated to what extent it is determined by the scientific medical literature. In other words we focused on the agreement between medicines discussed in the scientific medical literature and the medicines discussed in the newspapers.

3.2 METHODS

The present investigation set out to determine if there is an agreement in the types of medicines discussed in the scientific and medical literature and those discussed in the newspapers. For this purpose, we conducted a content analyses of scientific and medical journals and of Dutch newspapers.

Scientific and medical literature

To determine which medicines were most often discussed in the scientific medical literature, the content of ten scientific and medical journals over a nine-months period (January - September 1991) was analysed. The following journals were included The New

England Journal of Medicine (NEJM), the Lancet, the British Medical Journal (BMJ), Science, Nature, and five Dutch medical and pharmaceutical journals. We selected these journals because Dutch journalists writing about medicines had indicated to us in an earlier phase of our research that these were the journals which they used to get ideas and information to write their stories [10].

For the journals included, all the tables of contents were screened for publications about medicines. In case of doubt whether or not the publication really referred to medicines, the abstract and/or first paragraph of the publication was read; if the publication was shorter than one page the whole publication was read. A publication was included in the analysis if a drug was mentioned in the title, abstract, first paragraph or somewhere in the publication if it was shorter than one page. All different types of publications in the journals were analyzed except for the book reviews, case histories, advertisements, and short abstracts. We also excluded publications relating to drug policy since Dutch medical journalists had already indicated to us that these was not a topic on which they themselves wrote; news items in this matter are written by other members of the newspaper's staff [10].

In the analysis the medication was categorized with the Anatomical, Therapeutical and Chemical classification system (ATC). This system has been commonly used in drug utilization studies in Europe. In the ATC classification every preparation is given a code number consisting of up to five elements [13]. For the present purpose three extra main groups were added to the original ATC: a group for articles dealing with medicines in general, a group for medicines not yet approved or with a indication not clear and a group for alternative medicines such as homeopathic drugs. A total of 17 main groups was used to classify the medicines.[1] Publications containing more than one drug from different ATC main groups were included in more than one ATC group.

The data were analyzed on the first and second level of the ATC classification system. To establish the agenda of the scientific and medical literature concerned with medicines, the 17 main groups of the ATC system (first level) were ranked according to their frequencies. For all analyses concerned with agenda's, the 17 main groups of the ATC system (first level) were used. The second level

1 Gastrointestinal drugs + vitamins, Bloodforming drugs, Cardiovascular drugs, Dermatologicals, Gynecological drugs, Hormones (excl gynecological drugs), Antibiotics, Oncolytics, Anti-inflammatory drugs, Central Nervous System drugs, Antiparasitic products, Respiratory drugs, Eye- and ear drugs, Various, Homeopathic drugs, Drugs in general, not yet available drugs.

of the ATC classification system was used for descriptive statistics only. A total of 89 different subclasses (second level) can be distinguished in the ATC system used.

To determine whether the literature agenda changed, insofar as medicines were concerned, during the nine month period the agenda's of the different months were compared by using Spearman's rank correlation (R_S) to study the agreement in the ranking of the 17 different categories. We also tested if the agenda of the research articles and editorials was comparable to the agenda of all other publications. Furthermore, we compared the agenda of the British / American journals with the agenda of the Dutch journals to see whether or not there is a difference in the medicines discussed. There was an agreement between two agenda's if $R_S > 0.485$ ($p < 0.05$, 17 categories).

Furthermore we differentiated between publications focused on the negative consequences of drug use and those publications more positive or neutral in tone and established a "good" and "bad news" agenda.

Newspapers

The newspaper agenda was determined by analyzing the content of five daily newspapers was analyzed over a period of four months (June - September 1991). All publications were selected in which medication of some sort was discussed, however, articles on drug policy, letters to the editor and articles directly adopted from the news agencies were excluded.

The newspapers were divided in two categories, national daily newspapers and regional daily newspapers. Within the category national newspapers, we subdivided papers in quality newspapers and popular newspapers [14]. One has to realize that in contrast to German or British newspapers, all Dutch dailies should be characterized as quality newspapers, since tabloids and their sensationalism do not exist in the Netherlands [15]. The circulation of the five dailies selected for our study accounts for 39% of the total circulation of Dutch daily newspapers [16].

The medication mentioned in the newspapers was classified according to the ATC classification system. To establish the agenda of the newspapers, just as in establishing the agenda of the literature, the 17 main ATC groups were ranked according to their frequency. Like for the literature a "good news" and a "bad news" agenda was also establised.

Period of study.

The newspapers were analyzed during four months (June-September 1991). The scientific literature was studied during a period of nine months (Januari-September 1991). The scientific literature was analyzed longer then the newspapers for two reasons. First of all, the topics on the agenda of the scientific literature have to become prominent to the newspaper journalists, there might a time-lag before the effect of the agenda of the literature can be found in the newspapers. Journalists have to become aware of the topics. Secondly, the nine-months period was considered to be sufficient because in the newspaper articles only in one article a reference was made to a research article published in February 1991 in the scientific medical literature.

Comparison of the two agenda's

To compare the agenda of the scientific and medical literature with the agenda of the newspapers we used Spearman's rho (R_S) to study the agreement in the ranking of the 17 different categories. Furthermore, we compared the ten most frequently discussed subclasses in the scientific and medical journals with those of the newspapers.

To study whether or not there is a publication bias in the newspaper articles on medicines, the "bad news" agenda's and "good news" agenda's were compared.

3.3 RESULTS

Scientific medical literature

A total of 1574 publications about medicines was found in scientific medical literature in the period of nine months.

The largest contribution (62.7%) in the publications about medicines originated from the British/American medical journals (NEJM, BMJ, Lancet; see table 1). Nature and Science were responsible for 5.3% of the total number of medicines mentioned in the publications. The five Dutch journals provided for 27.6%. Letters to the editor was an important category within the journals to discuss medicines. Only 34 review articles discussing medicines were found during the nine-months period. If we compared the British/American medical journals, it is notable that the Lancet discussed medicines most often.

In the medical and scientific literature the categories "general anti-infectives" and "central nervous system" were mentioned most

Table 1
Type of publication per journal

	NEJM	Lancet	BMJ	Nature	Sci	Dutch	Total
article	65	105	76	1	4	97	348
editorial	27	28	40	-	1	70	166
letter	87	400	117	21	3	54	682
review	18	2	3	1	-	10	34
other	-	29	60	13	39	203	344
total	197	564	296	36	47	434	1574
		67.2%		5.3%		27.6%	

NEJM = New England Journal of Medicine, Lancet = The Lancet, BMJ = British Medical Journal, Nat = Nature, Sci = Science, Dutch = Dutch journals

Table 2
Scientific medical literature-agenda of medicines. (all journals and publication types included; n=1589). Within the main ATC groups the most important subclass(es) is (are) shown.

ATC main group	ATC subclass	ATC code	number of publications
General antiinfectives, systemic		J	327
	Systemic antibiotics	J01	71
	Virustatics, systemic	J05	73
	Immune sera and immunoglobulines	J06	61
	Vaccines	J07	73
Central nervous system		N	204
	Analgesics	N02	62
	Psycholeptics	N05	60
Blood and blood forming organs		B	164
	Anticoagulants	B01	57
	Antianaemic preparations	B03	37
	Plasma substitutes and perfusion solutions	B05	36
Antineoplastic/ immunosuppressive drugs		L	138
	Cytostatic drugs	L01	90
Alimentary tract and metabolism		A	125
	Antiacids, antiflatulents, antipeptic ulcerants	A04	25
	Antidiarrhoeals, intestinal antiinflammatory, antiinfective agents	A07	27
Cardiovascular system		C	104
	Cardiac therapy	C01	37
	Hypotensives	C02	53
Genito urinary system and sex hormones		G	81
	Sex hormones and stimulants of the genital system	G03	62
Respiratory system		R	80
	Anti-asthmatics	R03	45
Drugs in general		Z	78
Systematic hormonal preparation, exc. sex hormones		H	64
	Systematic corticosteroids	H02	26
Musculo-skeletal system		M	43
	Antiinflammatory and antirheumatic drugs	M01	36
Dermatologicals		D	42
Antiparasitic drugs		P	42
	Antiprotozoals	P01	31
Homeopathic and alternative medicines		Y	36
Various		V	33
Not registered medicines		X	16
Sensory organs		S	12

often (see table 2). Within the category "general anti-infectives" the subclasses virustatics and vaccines were the most important ones.

To check if the agenda changed during the research period we compared the agenda's of the nine separate month with each other. The Spearman rank correlation ranged from 0.60 to 0.94, with an average of 0.83. In other words, the agenda of the scientific and medical literature did not change very much during the research period.

The agenda of the research articles and editorials was comparable to the agenda of all other publications ($R_S = 0.96$, data not shown).

The agenda of the British/American medical journals correlated with the agenda of the Dutch journals ($R_S = 0.76$, see table 3). In the Dutch journals drugs for the central nervous system were more frequently discussed than the general antiinfectives. Furthermore, the antineoplastic and immunosuppressive drugs dropped from the fourth position on the British/ American agenda to the eight position on the Dutch agenda (see table 3).

Of all the publications found, 26% focused on the negative consequences of drug-use, e.g. side effects, while the main theme of more than half of the publications (58%) could be characterized as positive or neutral in tone and content.

Table 3
Comparison of the agenda's of the British/American medical journals and the Dutch journals.

ATC main group	British and American journals*		Dutch journals	
	%	rank	%	rank
General antiinfectives (J)	21.2	1	11.7	2
Central nervous system (N)	12.4	2	14.7	1
Blood/bloodforming organs (B)	11.4	3	9.4	4
Antineoplastic/ immunosuppres. drugs (L)	9.7	4	5.0	8
Alimentary tract and metabolism (A)	7.2	5	9.4	4
Cardiovascular system (C)	6.1	6	8.5	6
Genito urinary syst. / sex hormones (G)	5.7	7	4.4	10.5
Respiratory system (R)	5.6	8	4.4	10.5
Drugs in general (Z)	3.3	10	9.4	4
Systemic hormonal preparations (H)	5.0	9	2.3	13.5
Musculo-skeletal system (M)	2.5	12	3.7	12
Dermatologicals (D)	1.9	14	5.0	8
Antiparasitic drugs (P)	2.9	11	2.3	13.5
Homeopathic and alternative medicines (Y)	1.3	15	5.0	8
Various (V)	2.2	13	2.1	15
Not registered medicines (X)	1.0	16	1.1	17
Sensory organs (S)	0.5	17	1.7	16

* NEJM, BMJ and Lancet; $R_S = 0.76$, $p < 0.01$

Newspapers

A total of 178 publications was found in the newspapers over a four-month period. More publications appeared in the two popular newspapers (n=91) than in the two quality newspapers (50 publications). In the regional paper 37 publications about medicines were found.

The most important categories of medicines discussed in the newspapers were the general anti-infectives, followed by medicines for the central nervous system and drugs in the category "Genito urinary system and sex hormones" (see table 4). Drugs in the category "sensory organs" were not mentioned in the newspapers.

The negative consequences or problems with medicines were discussed in 14% of all the publications in the newspapers. Approximately three quarter of the publications were classified as

Table 4
Newspaper agenda on medicines (n=187)

ATC main group	ATC subclass*	ATC code	number of publications
General antiinfectives, systemic		J	36
	Systemic antibiotics	J01	5
	Virustatics, systemic	J05	5
	Vaccines	J07	23
Central nervous system		N	25
	Analgesics	N02	10
	Psychoanaleptics	N06	6
Genito urinary system and sex hormones		G	25
	Sex hormones and stimulants of the genital system	G03	19
Blood and blood forming organs		B	19
	Anticoagulants	B01	5
	Antihaemorrhagics	B02	4
	Antilipaemics	B04	5
Drugs in general		Z	15
Homeopathic and alternative medicines		Y	13
Alimentary tract and metabolism		A	8
	Antidiabetic therapy	A10	4
Cardiovascular system		C	8
	Hypotensives	C02	6
Respiratory system		R	8
Various		V	7
Antineoplastic/immunosuppressive drugs		L	7
	Cytostatic drugs	L01	7
Not registered medicines		X	3
Antiparasitic drugs		P	3
Dermatologicals		D	3
Systematic hormonal preparation, exc. sex hormones		H	3
Musculo-skeletal system		M	2
Sensory organs		S	0

* Within the main ATC groups the most important subclass(es) is (are) shown

"good news" stories. There was no significant difference found for the different types of newspapers (Chi square, $p > 0.05$).

Comparison of the two agenda's

When we compare the agenda of the scientific and medical literature with the agenda of the newspaper we see that the two agenda's were correlating (see table 5). An interesting difference is that the drugs for the genito urinary tract and sex hormones were relatively more prominent in the newspapers; the same could be said of alternative medicines.

Table 5
Comparison of the two agenda's

ATC main group	scientific medical journals		newspapers	
	%	rank	%	rank
General antiinfectives (J)	20.6	1	19.2	1
Central nervous system (N)	12.8	2	13.4	2.5
Blood/bloodforming organs (B)	10.3	3	10.2	4
Antineoplastic/ immunosuppres. drugs (L)	8.7	4	3.7	10.5
Alimentary tract and metabolism (A)	7.9	5	4.3	8
Cardiovascular system (C)	6.5	6	4.3	8
Genito urinary syst. / sex hormones (G)	5.1	7	13.4	2.5
Respiratory system (R)	5.0	8	4.3	8
Drugs in general (Z)	4.9	9	8.0	5
Systemic hormonal preparations (H)	4.0	10	1.6	13.5
Musculo-skeletal system (M)	2.7	11	1.1	16
Dermatologicals (D)	2.6	12.5	1.6	13.5
Antiparasitic drugs (P)	2.6	12.5	1.6	13.5
Homeopathic and alternative medicines (Y)	2.3	14	7.0	6
Various (V)	2.1	15	3.7	10.5
Not registred medicines (X)	1.0	16	1.6	13.5
Sensory organs (S)	0.8	17	0.0	17

$Rs = 0.72$, $p < 0.01$

Comparison of the ranking of the 17 main categories in the ATC system is a rather rough measure, we therefore compared the ten most frequently discussed subclasses in the scientific medical literature with those of the newspapers. Eight of the ten subclasses were on both agenda's: cytostatic drugs (L01), vaccines (J07), virustatics (J05), systemic antibiotics (J01), analgesics (N02), sex hormones and stimulants of the genital system (G03), anticoagulants (B01), hypotensives (C02) (see table 6).

The negative aspects of the use of medicines received proportionally more attention in the scientific and medical literature (26%) than in the newspapers (14%). If we compare the "bad-news"-agenda's, it is noticeable that the agenda's are quite different. However, the "good-news" agenda's were comparable (data not shown). Seven of the ten most frequently discussed subclasses of drugs were discussed in both the newspapers and scientific and

Table 6
Comparison of the two agenda's on the second level of the ATC system (incl. % publications concerned with negative aspects)

Scientific medical literature			newspapers		
	ATC subclass	**number**	**% neg. aspects**	**ATC subclass**	**number**	**% neg. aspects**
1.	Cytostatic drugs (L01)	90	33	Vaccines (J07)	23	0
2.	Vaccines (J07)	73	12	Sex hormones (G03)	19	32
3.	Virustatics, syst. (J05)	73	15	Analgesics (N02)	10	20
4.	Syst. antibiotics	71	39	Cytostatic drugs (L01)	7	14
5.	Analgesics (N02)	62	29	Psychoanaleptics (N06)	6	33
6.	Sex hormones (G03)	62	50	Various (V03)	6	0
7.	Immune sera/globulines (J06)	61	3	Hypotensives (C02)	6	0
8.	Psycholeptics (N05)	60	40	Virustatics, syst. (J05)	5	0
9.	Anticoagulants (B01)	57	30	Syst. antibiotics (J01)	5	0
10.	Hypotensives (C02)	53	34	Anticoagulants (B01)	5	0

medical journals in a positive way. In contrast, only four subclasses of the drugs discussed in a negative way in the newspapers could be found on the "bad-news" agenda of the scientific and medical journals. Sex hormones and stimulants of the genital system was the most frequently discussed subclass in a negative manner for both the newspapers and the scientific and medical literature. It is interesting to notice that this same subclass is on second place of the "good-news" agenda of the newspapers whereas it is not mentioned with the 15 most frequent positively discussed subclasses of the scientific medical literature.

3.4 DISCUSSION

The scientific and medical journals are the most important sources of ideas and information for journalists writing about medicines. The second most important source comprises the contacts of researchers with journalists direct or indirect through the press releases from universities [10]. Scientific journals are the most important communication channel for scientists. Although the scientific and medical journals are not especially targeted at journalists, journals do have certain standards, like the Ingelfinger-rule[1] which keep the content of their articles newsworthy. Fur-

1 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. This rule was promulgated to protect the New England Journal of Medicine from publishing material that had already been published and thus had lost its originality. Ingelfingers' successor, Relman, maintained this policy, and saw it as a way to discourage public announcement of research findings before publication in a scientific journal, as well as to discourage the growing practice of redundant publication (14)

thermore, the editors or publishers of scientific and medical journals are interested in mass media publicity and therefore send issues or press releases about articles to journalists in advance. For example, advance copies of the New England Journal of Medicine and Science are sent by first-class mail to journalists [1].

As shown by data presented in this paper, newspaper articles discuss the same main groups of medicines as discussed most often in the scientific literature. The two agenda's are comparable as shown by relatively high correlations. Eight of the ten most frequently discussed subclasses were on both the agenda of the newspapers and scientific and medical literature. However, we have to bear in mind that the agreement, as shown by these high correlations, does not establish a causal relationship between the scientific and medical journals and the newspapers. We have to keep in mind that press releases from universities and contacts with researchers may also influence the selection of topics by journalists. Furthermore, it may be argued that the mass media sometimes influence the research agenda, although it is very unlikely that any such effect would became manifest during the short period studied here.

The agenda of the scientific and medical literature did not change significantly during the research period of nine months. A study over a longer period might naturally detect a shift in the attention for certain research topics. Future research should analyze the scientific and medical literature over a longer period on an interval basis, so that changes in the agenda of the scientific and medical literature can be found and compared with possible changes in the newspaper agenda. The data in this study also suggest that when the agenda for medicines in the scientific and medical literature is determined by using the main ATC groups, an analysis of editorials and articles is sufficient.

The negative consequences of the use of medicines receives proportionally more attention in the scientific and medical literature than in the newspapers. Although it has been suggested that "bad news" is more newsworthy then "good news" [15], Dutch newspaper journalists seem more interested in "good news" about medicines. The "good news" agenda of the scientific and medical literature is comparable to the "good news' agenda of the newspapers. The "bad news" agenda's, on the other hand, are very different. We cannot explain this difference.

In both the newspapers and the scientific and medical journals anti-infective medication and drugs for the central nervous system are the most important groups of medicines discussed. However,

the third most important group in the dailies is the group containing the sex hormones, whereas this group is only in seventh rank on the scientific and medical agenda. This group contains for example "the pill", estrogens and progesterone. These medicines are used to prevent pregnancy, menopausal complaints and osteoporosis. In 1988 one million women in the Netherlands used "the pill" [18]. So, the news about these medicines concerns a large number of the readers of the dailies. Furthermore, the controversy over the harmful effects of estrogens still persist after more than fifty years of use [19]. These two reasons might explain the proportionally large attention paid to this group in the newspapers.

Much attention in both newspapers and scientific and medical journals is also paid to the anti-infectives. This group includes vaccines and systemic virustatics, both categories were discussed, among other things, in relation to AIDS.

In conclusion we can say that there is an agreement between the main groups of medicines discussed in the scientific and medical literature and those discussed in the daily newspapers in the Netherlands. Although it has been suggested that journalists are more interested in "bad" news, we found the opposite in this study concerned with medicines.

REFERENCES

1 Nelkin D. Selling science. New York: W.H Freedman and Company, 1987.
2 Hanssen L.S.A.M. Wetenschap in de krant. In: Wetenschap in woord en beeld. Utrecht: Stichting Publieksvoorlichting over Wetenschap en Techniek, 1991.
3 Hellmann M. Ausprgungen medizinischer Berichterstattung in Tageszeitungen. (pp127-147) In: Medizinpublizistiek. Prmissen - Praktiken - Probleme. Fisher H.D (Hrsg). Frankfurt am Mein, Verlag Peter Lang, 1990.
4 Jones G, Connell I, Meadows J. The presentation of science by the media. Primary Communication Research Centre. University of Leicester, 1978.
5 Crawshaw R. The media and the AIDS crisis. J Clin Epidemi 1990; 43(5): 523-6.
6 Galjaard H. Publieksmedia en gezondheidszorg. Ned Tijdschr Geneeskd 1992; 136(27): 1309-13.
7 Kristiansen C.M. Newspaper coverage of diseases and actual mortality statistics. European Journal of Social Psychology 1983;13: 193-4.
8 Freimuth V.S., Greenberg R.H., DeWitt J., Romano R.M. Covering cancer. Newspapers and the public interest. Journal of Communication 1984: 34: 62-76.
9 Crandall R.L. Research funding and the media. JAMA 1991; 266(9): 1279,1282.
10 Van Trigt A.M, De Jong-van den Berg L.T.W de, Haaijer-Ruskamp F.M, Willems J, T.F.J. Tromp. Journalists and their sources of ideas and information on medicines. Social Science & Medicine 1994; 38: 637-643.
11 Winnubst M. Wetenschapspopularisering in Vlaanderen. Katholieke Universiteit Leuven. Faculteit der Sociale Wetenschappen. Departement Communicatiewetenschap, 1990.

12 McCombs M. E. Explorers and surveyors: Expanding strategies for agenda-setting research. Journalism Quarterly 1992;69 (4): 813-24.
13 Anonymus. Nordic Statistics on Medicines 1981-1983. Part II. Nordic Drug Indes with Classification and Defined Daily Dose. Upsala: Nordic Cousel on Medicines, 1985.
14 Kaiser A. Een wereld van papier. Werkwijze en uiterlijk van de Nederlandse krant. In: Media in Nederland. J. Bardoel, J. Bierhoff (ed). 6e druk, Wolters Noordhoff Groningen 1990.
15 Brants K. and McQuail D. The Netherlands. In: The media in Western Europe. pp152-166. Euromedia research group; O/stergaard B.S (ed). Sage publications: London, 1992.
16 Timmer G, Hoekstra J.F. Dagbladoplage haalt nieuw record. De Journalist 1990; 41(23): 32-36.
17 Angell M, Kassirer J.P. The Ingelfinger-rule revisited. N. Engl. J. Med 1991; 325(19): 1371-1373.
18 Delft M.L.E van. Sociale atlas van de vrouw. (Cahier/ Sociaal en Cultureel Planbureau; nr 82), Den Haag: VUGA 1991.
19 Palmlund I. Risk evaluation and estrogens. International Journal of Risk and Safety in Medicine 1991; 2: 321-342, 1991.

Chapter 4

JOURNALISTS AND EXPERT SOURCES ON MEDICINES[1]

Abstract

We describe here how medical journalists writing for Dutch daily newspapers use experts when dealing with medicines. Two approaches, interviews and a content analysis, were used to answer the research questions. Both methods show that journalists can find relevant experts to give them information about various medicines. The pharmacist, however, is not one of them. Furthermore, the content analysis shows that two types of experts can be distinguished: the objective and independent experts who often were cited alone in an article, and the subjective experts who frequently were cited in combination with other experts.

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4.1 INTRODUCTION

The general public as well as health professionals may use many different sources to get information about health, illness and medicines. Results of studies show that family magazines and daily newspapers not only act as a source of medical information for the general public [1,2,3], but also inform physicians and other groups of health professionals [4,5,6]. Durant et al. (1989) showed that the general public is very interested in news about new medical discoveries [7]. Because of the role mass media can play in the diffusion of information about medicines, we were interested in the sources used by journalists who write about medicines in daily newspapers. The results of the first part of our study shows scientific journals and researchers to be important sources of information [8]. In this study we explore the role of experts, including researchers, as sources of information on medicines.

The most important source of information about medicines for the general public is the physician, followed by the patient package insert. The pharmacist is relatively unimportant as source of information on medicines [1-3]. But the World Health Organization recommends that the pharmacist should play a central role in the provision of advice and information to patients and the general public on the use of medicines [9]. Therefore, in this study, special attention is paid to the role of the pharmacist, is (s)he recognized as one of the experts on medicines by journalists?

Experts can have several reasons to talk to the press. According to DiBella et al. (1991) 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 cited by scientists for participating in an interview was to enhance the opportunity to gain commercially financial rewards [10].

Although scientists and other professionals may have several reasons for having a positive attitude towards cooperation with journalists, several problems have been described in the communication process between experts and journalists. According to Willems there are two kinds of barrier 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 [11]. Willems found relatively few scientists who put up absolute communication barriers in the 1970s. But the scientists had complaints about journalists [11], and the scientific quality of the science articles in the newspapers [11].

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

Although various initiatives have been taken to facilitate contacts between scientists and journalists, there are still 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 [14]. Several studies, concerning the relative communication barriers, have focussed on the lack of accuracy in mass media reports of science [e.g 15-17]. These studies, however, did not deal with the question whether a relevant expert was consulted. This question seems relevant because a survey by Dunwoody and Ryan (1987) showed that scientists are often asked by journalists to comment on topics outside their area of expertise [18].

In the this study we look into the following questions:

- How do medical journalists writing for Dutch newspapers use experts when dealing with information about medication, both prescribed drugs as well as over-the-counter (OTC) medication?
- Which experts are consulted and why?
- Is the pharmacist recognized as an expert on medicines by journalists?
- Can these experts be considered as relevant experts?

4.2 Methods

Two approaches which gave complementary information were used in order to answer the research questions. Firstly, in-depth *interviews* were conducted with journalists who write about medicines. Secondly, a *content analysis* was undertaken of newspaper articles in which medication was mentioned.

Interviews were needed to collect information about the way journalists find relevant experts, the criteria they use in selecting an expert, the reasons for using an expert, the kind of expert consulted, and the policy of the journalists regarding corrections by experts prior to publication of the article. The content analysis gave information about the number of experts cited in newspaper articles, the kinds of experts, and if the experts consulted could be considered as a relevant experts. Because we used interviews there was a possibility we might receive social desirable answers (that is, answers biases by the respondent's attempt to give answers that are socially desirable or preferred); this was partly checked by using the results of the content analysis.

The seven journalists, interviewed in this study, were responsible for news about medicines at four national and two regional newspapers. All of them participated in the first interview; one respondent did not participate in the second interview. The newspapers these journalists work for were all content analyzed except for one regional newspaper. Regional newspapers do not pay much attention to science news in general [19], but is was considered wise to carry out a content analysis on one of them. The circulation of these six dailies for which the respondents accounts for approximately 42% of the total circulation of all Dutch dailies. The circulation of the five newspapers in the content analysis accounts for 39% of the total circulation [20].

Interviews

In the interviews we used open-ended questions regarding the kind of experts consulted about medicines, the reasons for consulting an expert, and how to find relevant experts. Because the Media Resource Service (MRS) is also open to European journalists we asked our respondents if they were aware of this service, whether they had ever used it, and if they would welcome a Dutch database of experts.

Furthermore we asked the journalists about their requirements regarding experts, and if they would consult professor X about medicine Y. Professor X is a famous Dutch professor in a medical specialty and who is active in research concerning medicines such as medicine Y. He has been interviewed frequently by mass media journalists. In the interviews we mentioned professor X's real name.

Lack of accuracy in the reporting on science may be a reason for scientists to be reluctant to talk to the press. One way to overcome this problem, at least in part, is to send a newspaper article prior to publication to the scientist or expert interviewed so that they can

check the text. We asked the respondents about their policy regarding this inspection prior to publication.

We also talked with the journalists about their education and experience in journalism.

Content Analysis

All articles in which medication of some sort was discussed were selected from five daily newspapers over a period of four months (June -September 1991). However, articles on drug policy were excluded: because the journalists who were interviewed indicated that they do not write articles on this topic, as it is covered by other colleagues.

The newspapers were divided in two categories: national daily newspapers (four) and regional daily newspapers (one). Within the category national newspapers, we subdivided papers in quality newspapers (two) and popular newspapers (two) [21].

The articles were coded on several topics. First of all we excluded stories from news agencies (NA stories) because we wanted to compare the results of the content analysis with those of the interviews and our respondents are not involved in NA stories. We differentiated between articles published in the science section of the newspaper and articles published in other parts of the newspaper to test whether the number of experts used differed between these two sections. We also noted the names of the experts mentioned in the articles, and how often these experts were cited.

An expert was considered to be a relevant expert if they gave information about a subject in which they were involved. For this reason we regarded patients (experts by experience), spokespersons from interest groups, professional groups and companies as relevant experts. For the other experts we coded the reason for mentioning the expert, and used the Comprehensive Medline® Database (January 1990 - August 1992) to see whether or not the expert published any scientific articles on the subject about which they were cited.[1] We also studied how often different types of experts were mentioned alone, or in combination with other types of experts. We also checked the profession of the experts mentioned, differentiating between physicians and pharmacists. When the profession was not made clear in the newspaper articles, we checked the Dutch register for physicians and pharmacists. The

1 This database is compiled by the National Library of Medicine, and contains information about publications in about 3600 scientific journals. It contains all the information from the Index Medicus, Index Dental literature and the International Nursing Index. In this database it is possible to search for authors of publications, even when the exact name or initials of the author are unknown.

people who could not be found in these two registers were coded in the category 'other profession'.

4.3 RESULTS OF THE INTERVIEWS

The journalists

The length of experience in journalism varied from 6 to 37 years. The journalists' training was also diverse. Only one journalist had followed a special course in science journalism. Three of them have an academic degree (in political sciences, chemistry and biology). Only one of the journalists contributed items other than medical news.

Reasons for consulting experts

According to five of the seven journalists, an expert is consulted whenever a story is incomplete or to get more background information on a particular subject. Another reason (mentioned by three respondents) for consulting an expert is to obtain information on the Dutch situation. Again, three journalists mentioned spontaneously that they sometimes consult experts to check information. As one of them putted it:"I check everything. I can not allow myself to make mistakes. Medical information has to be treated very carefully". In answering a question in which different reasons for consulting an expert were given, six journalists indicated that to check information is very often a reason for consulting an expert.

Kind of experts consulted

The kind of expert consulted depends on the subject of the article. All journalists spontaneously mentioned a physician or medical specialist as possible expert to consult on medicines. The pharmacist and spokespeople of pharmaceutical companies were both mentioned by three journalists.

But sometimes it can be difficult to find an expert. This has nothing to do with absolute communication barriers, but is of a practical nature: there are subjects on which no-one is working in the Netherlands. Sometimes nobody is available at that particular moment. This can be a reason to drop the article or subject. All the respondents indicated that they seldom meet experts unwilling to talk to them. "Sometimes it is difficult to find a relevant expert. But I never found that an expert did not want to talk to me".

The journalists use several different search strategies to find an expert. They referred to their own address books, in which they note, for example, persons they have met on symposia or con-

gresses, or people they have interviewed before. They referred to address books from universities, and to their own files in which most of them keep scientific articles. Sometimes a public relations officer of a university or university hospital or a medical doctor they know is asked for advice on finding an expert.

Four of the six journalists were familiar with the Media Resource Service (MRS); two respondents had never heard of it. None had ever used the MRS to get in touch with an expert. The respondents indicated no need for a Dutch equivalent to the MRS because they themselves are capable of finding relevant experts. One respondent indicated that such a service might be useful to journalists who are less experienced and less specialized in a particular field.

Conditions in the selection of experts

One of the major conditions in selecting an expert is their independence, i.e an expert should not have any interest in the company producing that drug unless their opinion is asked to illustrate the company's view. Other important criteria in this selection process are scientific status and number of scientific publications on a particular subject. Furthermore it seemed important whether the expert was recommended by someone the journalist knew and if they had a positive experience with the expert in the past. Another more practical condition the journalists mentioned was that the expert had to be available.

Relative unimportant were the age and the gender of the expert and whether the expert was known from the mass media. However, two journalists indicated that they preferred an expert the newspaper readers would know. A relevant expert, however, seemed to be preferred over a famous one.

We asked the respondents if they would consult the famous Professor X. All journalists indicated to prefer to consult another expert because Professor X is already too often interviewed in the mass media and/or they were not certain about his independence.

Correction of articles prior to publication

Two journalists seemed to have a strict policy regarding the correction options prior to publication for experts interviewed. One respondent always asked the expert to check the information. Another respondent never allowed this, because in his opinion what is published is the journalists' responsibility, and whenever one asks the person interviewed to check the information before publication part of this responsibility is placed on the shoulders of the expert. This respondent indicated that whenever the expert has

factual comments on the published article a correction can be published in the newspaper. His policy seldom has a negative effect on the willingness of experts to speak to him.

For the other journalists' policy regarding this correction option seemed to depend on several conditions, such as the size of the article, the amount of information given by the person interviewed, the time available prior to publication and the experts' own wishes. If the journalist is not sure theat they have got the information right, then this would be another reason to ask the expert to check it. One journalist indicated there was one exception to this: an expert from a pharmaceutical company never gets the opportunity to check the information about medicines before publication.

Only facts can be changed during the correction process. The person interviewed has no influence on the style, order or conclusions drawn by the journalist.

4.4 RESULTS OF THE CONTENT ANALYSIS

Number of experts in articles

Of the 178 original articles, 86 articles contained the names of 128 people. Seventeen experts were cited in more than one article, usually in relation to the same subject but in different newspapers. A total of 108 different people were cited, of whom 80% came from the Netherlands.

The mentioning of experts did not differ significantly over the different sections of the newspapers (Chi Square, $p > 0.05$): an expert was cited in 55% of the articles on the news pages and in 42% of the articles in the science sections. The mentioning of experts in the articles did differ for the types of newspapers (Chi Square, $p < 0.05$; see Table 1): in the regional newspaper proportionally fewer experts were mentioned. The quality newspapers mentioned more often than the popular and regional newspapers more than two experts in one article (Chi Square, $p < 0.05$).

In 13 of the 86 articles (15%) only foreign experts were mentioned. In six articles a foreign experts in combination with a Dutch expert was cited; 67 articles (78%) cited only Dutch experts (see Table 1). No significant difference was found for the different types of newspapers (Chi Square, $p < 0.05$).

Kind of Dutch experts consulted

The experts consulted can be subdivided in different categories (see Table 2 for Dutch experts and Table 4 for all experts). The

Table 1
Articles with experts by type of newspaper

Types of newspaper	Total number of articles	Articles with experts	Articles with Dutch experts only	Articles with foreign experts only
Quality	50	26 (52%)	21	3
Popular	91	49 (54%)	37	8
Regional	37	11 (32%)	9	2
Total	178	86	67	13

group of the 51 "real" experts can be distinguished in different ways (see Table 2). Approximately half of this group (25 people) was cited or mentioned in connection with the results of their own research projects, or because a research project in which they were going to participate was starting. The other 26 experts were consulted for various reasons, some discussed a typically Dutch problem or situation (six people) and some reacted on a foreign study or foreign situation (12 people).

Table 2
Categories of Dutch experts

Total	Categories
87 Dutch experts	51 'real' experts
	9 patients (experts of experience)
	13 spokespeople for companies
	14 spokespeople of interest or professional groups

Of this group of 51 "real" experts, 30 (59%) have been found in the Medline® database. They published scientific articles between 1990 and 1992 which were related to the subject in the newspaper article. Six experts who were described in the newspaper as researchers could not be traced in the database. Of the other 15 experts no relevant scientific articles have been found in the database, but they can be viewed as experts on the subject because of their jobs (we will call this category "functional experts"). In this last category we found, for example, the manager of the Dutch equivalent of the American FDA giving information about the process of registration of medicines.

Three quarters of the experts who discussed the results of their own study or the results of a foreign study have been found in the Medline® database; these were experts with relevant research experience. Most of the experts who reacted to a foreign problem or a foreign situation were not found in the database (see Table 3).

Because the journalists indicated that the scientific status of an expert is a relevant condition we also counted the number of pro-

Table 3
Type of information given by the 'real' experts, and the number of people traced in Medline ® (n=51)

	Number of experts	Number of people traced in Medline®
Information about results own research	20	17
Information about a new project	5	2
Reaction to a foreign study	7	5
Reaction to a foreign problem	5	1
Information about a Dutch problem/situation	6	2
Other reason	8	3
Total number of 'real' experts	51	30

fessors mentioned. Of the 51 "real" experts 18 (35%) were professors. More than half of all the experts (patients excluded) was a medical doctor and six pharmacists were mentioned in the articles. The profession of 28 people was neither physician nor pharmacist.

Articles with more than one expert

In 33 articles more than one expert was found. They can be subdivided in five categories. Table 4 shows how often different types of experts, including foreign experts, were mentioned alone or in combination with others.

When only one expert was mentioned, this expert was most often a reseacher. Spokespeople from interest and professional groups and patients were seldom mentioned as the only expert. Often patients were combined with spokespeople from interest and professional groups (see Table 4).

In five of the 33 articles with more than one expert, the experts did not agree with each other, or they had different opinions over a certain therapy or the relation between a drug and its side effects. Most of the time the different experts gave the same or supplementary information.

Table 4
Combinations of experts in articles (%)

Type of expert	Cited alone	Cited in combination with				
		Research	Functional	Interest group	Industry	Patient
Research (n=64)	56	26	18	2	3	3
Functional (n=21)	48	28	10	5	14	0
Interest groups (n=16)	12	6	6	38	19	31
Industry (n=15)	20	13	20	20	27	20
Patient (n=11)	18	18	0	45	27	18

One politician cited as an expert was excluded from this analysis. The horizontal percentag es add up to more than 100% because sometimes more experts from different categories were mentioned.

4.5 DISCUSSION

Reasons for consulting an expert

An important reason for consulting an expert is to check information on medicines. Journalists have to be very careful with medical news, including news about medicines. One of the concerns within the medical community seems to be that newspaper articles promising new cures may raise false hopes. Therefore sources should be carefully checked and counter checked before releasing this kind of information [22]. On the other hand, media reports on the adverse effects of medicines may also have the potential to change health behaviour. Both Wellings in the UK and Jones et al. in the USA describe the influence of negative publicity in the mass media on the drop in the use of oral contraceptives [23,24]. According to Wellings some women bypassed their medical practitioners and acted purely on the basis of media reports [23].

The results of the interviews show that an important condition in the choice of experts is their independence. Scientific status is also reported as an important condition. The results of the content analysis show that about one third of the researchers and functional experts is a professor, so it would seem that journalists prefer an authorative source with 'high' scientific status. In the interviews most of the journalists indicated that they would rather consult a relevant expert than an expert the public will know. This is in contrast with the "American" idea of the "visible scientist". These scientists have usually established their reputations in their own professional areas before venturing into the public domain, but they are usually interviewed about topics tangential to their scientific expertise [25].

Type of experts consulted

The results of both the interviews and the content analysis show that physicians are preferred over pharmacists as experts on medicines. Some journalists do recognize the pharmacist as expert (interviews), but a pharmacist is seldom cited in newspaper articles on medicines (content analysis). The recommendation of the World Health Organization in 1989 that the pharmacist should play a central role in the provision of advice and information to the general public on the use of medicines [9] has therfore not yet been implemented. The pharmacist is not used as source of information either by the general public [1,2,3] or by journalists.

Although we considered patients as experts of experience, the results of the content analysis show that a patient is seldom the only expert mentioned in a newspaper article. It seems that science

journalists consider the expertise of one patient an insufficient basis for an article. The journalists interviewed do not consider patients to be experts; patients do not satisfy one of their most important conditions for selecting an expert: high scientific status. In the society, however, the expertise of patients is recognized to be important. Patients and interest groups do play a role as experts by experience in the development or implementation of health policy. Patients also become more involved in decisions concerning the treatment of their own disease [26]. In the newspaper articles the information from patients is often combined with information of experts who represent the view of more patients and/or the view of a group of health care professionals, and/or the spokespeople of interest groups. But spokespeople of interest groups are also seldom the only experts consulted; their information is often combined with information from patients or other spokespeople from interests groups. Researchers, on the other hand, are the only expert consulted in more than half of the cases; if they are mentioned in combination with other experts it is most likely to be with another researcher. So the different kind of experts are treated differently. There seems to be a differentiation between two sorts of experts: the objective experts - researchers and functional experts - and the subjective experts - patients and spokespeople of interest groups and pharmaceutical companies. The objective experts are more often cited alone in articles, whereas the subjective experts are often combined with other experts.

The different experts, including patients, cited in the same article most of the time gave the same or complementary information. This is in contrast with, for example, political reporting, where experts are used to express different views.[1] In the field of medicine, however, the media exclude dissident experts and voices [27].

Can a relevant expert be found?

The respondents indicated that they have no problems finding relevant experts. An expert database, like the Media Resource Service (MRS), is not considered necessary. With the interpretation of these results we have to keep in mind that our respondents are specialized science journalists; most of them only write about medicine. A service like the MRS might be useful to general science writers or journalists who have to write about some scientific drama or controversy only once. Peaks in the use of the MRS have

1 Newspaper articles on drug policy were excluded in this study. In those articles patients and interest groups are more likely to express different views.

followed disasters at Chernobyl and the Piper alpha oil platform, the Alaskan oil spill, and the Gulf war [13].

In relation to the results of the content analysis, we have to make some remarks about the method(s) used. First of all, we do not know if the journalists actually had personal contact with the expert mentioned in the article. Moreover, not all sources and experts consulted when preparing an article are always mentioned in the article [8]. To check whether or not a relevant expert gave information about research we checked if the expert could be found in the Medline® database. We realize that Medline® is only one of the databases containing information about published research articles. It does not contain information about all Dutch professional medical journals and does not give any information about the status of the published research. The method used only gives us global information about a person's publishing activity. If we want to know if they are viewed by their peers as a relevant expert, we can, for example, use the Science Citation Index, like Shepherd (1981) did in his case study about the experts cited in mass media reports in the marijuana controversy [28]. Because we wanted to check if an expert was consulted within their field of experience, this latter approach seemed irrelevant. We choose this definition of relevant expert because it is stated in a concept code of the Dutch Federation of Medical-Scientific Associations concerning the relations of scientists and the press that a scientist only may give information to journalists about research within his or her field of expertise [29].

Keeping in mind these restrictions, we may conclude that, contrary to the findings of Dunwoody and Ryan [18], our results suggest that the experts are referred to within their area of expertise. Journalists seem capable of finding relevant experts and scientists. This difference in results may be explained in two ways:

- We interviewed specialized science reporters in the Netherlands, while Dunwoody and Ryan base their conclusions upon a survey among scientists in the USA. The scientists in Dunwoody and Ryan's study may have dealt with general science writers or general journalists. So the experience of the reporters in our study may explain the ease in finding relevant experts.
- The respondents in our study were writing about medicines. Perhaps journalists writing about medicine are more aware of possible unwanted negative effects of their articles and therefore try harder to find relevant experts because media reports on medicine sometimes may influence health behaviour and/or give false hope.

Conclusion

In conclusion we may say that the journalists in this study are able to find relevant experts to give them information about various medicines. The pharmacist, however, is not one of them. Furthermore, two types of experts can be distinguished: the objective experts who may be cited alone in an article, and the subjective experts who have to be cited in combination with other experts.

REFERENCES

1 De Jong- vd Berg LTW, Haaijer-Ruskamp FM, Van Trigt AM. Evaluatie van een voorlichtingsbrochure over geneesmiddelen en de overgang. Pharmaceutisch Weekblad 1989;124: 870-876.

2 De Jong- vd Berg L, Waardenburg C. Geneesmiddelengebruik tijdens de zwangerschap. Groningen: Styx-publications, 1991, pp 47-51.

3 Visser TJ. Geneesmiddelvoorlichting. Een overzicht. Leiden: Instituut voor Huisartsgeneeskunde en Wetenschapswinkel RU Leiden, 1989.

4 O'Keefe MT. The first human heart transplant-A study of diffusion among doctors. Journalism Quarterly 1969: 46: 237-242.

5 O'Keefe MT. The mass media as souces of medical information for doctors. Journalism Quarterly 1970; 47: 95-100.

6 Phillips DP, Kanter EJ, Bednarczyl B, Tastad PL. Importance of the lay press of medical knowledge to the scientific community. New England Journal of Medicine 1991; 325(16): 1180-3.

7 Durant JR, Evans GA, Thomas GP. The public understanding of science. Nature 1989; 340: 11-14.

8 Van Trigt AM, De Jong- vd Berg LTW, Haaijer-Ruskamp FM, Willems J, Tromp TFJ. Journalists and their sources of ideas and information in medicines. Social Science & Medicine 1994; 38 (4): 637 - 643.

9 Lunde I, Dukes G. (ed). The role and fuction of the community and hospital pharmacist in the health care systems of Europe. Groningen: Styx Publications, 1989

10 Dibella S, Ferri AJ, Padderud AB. Scientists' reasons for consenting to mass media interviews: A national survey. Journalism Quarterly 1991; 68: 740-9.

11 Willems, J.Th.J.M., 1976, Wetenschapsjournalistiek. Nijmegen: Gelderlander Pers, 1976.

12 Stichting PWT. Wetenschap en techniek voor een breder publiek. Utrecht:Stichting Publieksvoorlichting over Wetenschap en Techniek, 1991.

13 Langley C. Is there a need for reliable sources of scientific information. Science Communication in Europe. A report from the Ciba Foundation Discussion Meeting. London: Ciba Foundation, 1991.

14 Cameron SM. Medicine and the microphone: using the media to teach our patients. Can Med Assoc J 1991; 144(4):476-477.

15 Pulford DL. Follow up study of science news accuracy. Journalism Quarterly 1976; 53: 119-121.

16 Tankard JW, Ryan M. Newssource perceptions of science coverage. Journalism Quarterly 1974; 51: 219-225, 334.

17 Willems J, Van Oostrum I. Medische informatie in de pers. Medisch Contact 185; 40 (27): 809-812.

18 Dunwoody S, Ryan M. The credible scientific source. Journalism Quarterly 1987; 64: 21-7.
19 Hanssen LSAM. Wetenschap in de krant. Wetenschap in woord en beeld. Utrecht:Stichting Publieksvoorlichting over Wetenschap en Techniek, 1991.
20 Timmer G, Hoekstra JF. Dagbladoplage haalt nieuw record. De Journalists 1991;41(23):32-6.
21 Kaiser A. Een wereld van papier. Werkwijze en uiterlijk van de Nederlandse krant. Media in Nederland. Edited by J. Bardoel and J. Bierhoff. Groningen: Wolters Noordhoff, 6th edition, 1990.
22 Crashaw R. The media and the Aids crisis. Journal of Clinical Epidemiology 1990; 43(5): 523-6.
23 Wellings K. Help or hype: an analysis of media coverage of the 1983 pill scare. Health education and the Mass Media, edited by DS Leathar, GB Hastings, KM O'Reilly and JK Davies. London:Pergamon, 1986.
24 Jones EF, Beniger JR, Westoff CF. Pill and IUD discontinuation in the United States, 1970-1975: The influence of the media. Family Planning Perspectives 1980; 12: 293-300.
25 Rae Goodell (1977) cited from Dunwoody S. The scientist as source. Scientists and Journalists, edited by SM Friedman, S Dunwoody and CL Rogers New York: The Free Press, 1986.
26 Stuurgroep Toekomstscenario's Gezondheidszorg. De toekomst van het geneesmiddel in de gezondheidszorg. Houten/Zaventem: Bohn Stafleu Van Loghum, 1993
27 Karpf A. Doctoring the media. London: Routledge, 1988.
28 Shepherd RG. Selectivity of sources: Reporting the marijana controversy. Journal of Communication 1981; (spring): 129- 137.
29 Birfelder EJ. Wetenschap en publiciteit; over terughoudendheid ten opzichte van de media. Nederlands Tijdschrift voor Obstetrie & Gynaecology 1991; 104: 315-6.

CHAPTER 5

THE PHARMACEUTICAL INDUSTRY AND THE LAY PRESS

THE INDUSTRY'S POINT OF VIEW[1]

Abstract

The general public has a high degree of interest in information relating to health and illness. Family magazines and daily newspapers play an important role as sources of information about these subjects. Journalists writing about medicines in newspapers in the Netherlands have been found to use a series of complementary sources to obtain ideas and information on this subject; the pharmaceutical industry is one of the sources used by them. In this paper we explore the role of the lay press as a communication channel for pharmaceutical companies. The results of this study show that information from the pharmaceutical industry to the general public has become increasingly extensive and emphatic. Pharmaceutical companies consider that it is important to inform a lay audience about their products and about the diseases for which they can be used. The lay press, both daily newspapers and family magazines, can play an important role in informing a lay audience about diseases and new or improved products. If the lay press pays attention to these products many potential 'users' can be reached. Pharmaceutical companies do approach mass media journalists with information about products in various ways at different moments. As long as independent and critical journalists and editors decide for themselves whether information about drugs coming from pharmaceutical companies is newsworthy enough to be published, what reaches the printed page is likely be genuine news and not hidden advertising. Journalist should make very clear to the reader which sources have been used to compile the article, so that the reader can decide for himself whether he wishes to regard the information as reliable.

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5.1 INTRODUCTION

The general public has a high degree of interest in information relating to health and illness [1]. Family magazines and daily newspapers play an important role as sources of information about these subjects [2-4]. These sources are also used by health professionals and researchers to obtain new scientific and medical information [5-7].

Journalists play the most important role in deciding what becomes news; they determine not only what information people can obtain from the mass media but also the manner in which that information is presented and can be interpreted. Journalists writing about medicines in newspapers in the Netherlands have been found to use a series of complementary sources to obtain ideas and information on this subject; their major source of information is the scientific medical literature, followed by information emanating directly from researchers and universities. The pharmaceutical industry is considered to be less important by journalists themselves, but it proves to be the third most frequently cited source of information in the newspaper articles relating to medicines [8]. Not only the journalist and the editors decide what becomes news, sources such as researchers and pharmaceutical companies themselves decide what information they reveal, which details they highlight or discard, and when the story is to be made available to the press. Every such decision, which makes some data visible to the press and relegates other data (at least provisionally) to obscurity is an act of news management as well [9].

Although it is clear that any of these sources may be regard it as being in their own interest to release their data for publication in newspapers or magazines, we will concentrate here on the interests and activities of the pharmaceutical industry. There are two major reasons for examining this particular source. First of all, although journalists had expressed to us considerable scepticism regarding information emanating from this source one in fact found that they used its information relatively frequently [8]. Secondly, there is indeed evidence that the pharmaceutical industry is becoming increasingly interested in the passing of messages through the mass media to the general public [10] and to health professionals [11].

Pharmaceutical companies use several different strategies to promote their drugs. Most of these promotional efforts focus on health professionals, particularly the physicians who prescribe

these products. Through advertisements in medical journals, direct mailing, and visits by drug company representatives, health professionals are made aware of the arrival of new drugs and of news relating to older ones. Furthermore companies organise meetings, conferences and distribute free drug samples and gifts to promote their products and improve their image. To an ever greater extent, these activities have become regulated by codes of promotional practice, notably those drawn up jointly by the pharmaceutical manufacturers themselves (for example the "European Code of Practice for the Promotion of Medicines" adopted by the European Federation of Pharmaceutical Industries' Associations [12]) and codes or standards issued by the health authorities [13,14]. The implementation of these codes sometimes appears unsatisfactory [15], but they nevertheless are experienced by industry as something of a brake on its promotional activities. Partly because of this, pharmaceutical companies seek to find additional ways to promote their products. One way is the promotion of drugs through the public media [16,17]. Since directives promulgated by the European Union forbid the advertising of prescription drugs to the general public [13], one sees that pharmaceutical companies attempt instead to win the interest of mass media journalists in passing on messages to a mass audience [15-16, 18-20]. Nelkin [19] has described the manner is which Lilly's drug for arthritis, Oraflex, was marketed as news in the U.S.A: In 1982 the firm's public relations office sent out 6500 press kits promoting the drug. The product was covered as science news in 150 newspapers and television stations, and prescriptions increased from 2000 to 55000 a week. After some 12 weeks later, Oraflex was withdrawn from the market because a report showed harmful side effects [19]; it seems likely that the scale on which these occurred was a direct consequence of the sudden and overwhelming introduction of the product [21].

More recently, the Glaxo company has been accused in the Netherlands of communicating with mass media journalists before the official approval of sumatriptan, a new anti-migraine drug (see Table 1). Not only in the Netherlands but also in France, sumatriptan received widespread coverage in the lay press ahead of its official approval for marketing. According to the French Drug Bulletin Prescrire, the articles in the lay press were part of a multimedia promotional campaign organized by Glaxo [22]. Glaxo replied that it is common and accepted practice for companies to communicate about the disease area in which they operate to ensure that the scientific and medical community are informed about medical pro-

Table 1
News coverage concerning sumatriptan. Messages in the printed mass media in the Netherlands,* October 1990 to January 1993

month	published in:	content of publication
(9-90	**8th Migrain Trust International Symposium in London)**	
10-90	newspaper, magazine	new drug against migraine, not yet available in the Netherlands, but awaiting approval
1-91	family magazine	new anti-migraine drug is very effective
(6-91	**press conference organised by Glaxo about the approval of sumatriptan)**	
6-91	newspapers	new medicine for the treatment of migraine
6-91	newspaper	criticism; too little is known about mechanisms of action, side effects.
8-91	newspaper	article about sumatriptan and its mechanism of action in the science section of a newspaper
8-91	family magazine	article about sumatriptan; less side effects than ergotamine
12-91	family magazine	article about antimigraine medication. Sumatriptan is a miracle cure
6-92	feminist magazine	Sumatriptan for migraine patients, side effects unknown
1-93	newspapers	heart failure in a woman after the use of sumatriptan

* articles about the cost of sumatriptan and the reimbursement are excluded.

gress. Journalists, it stated, had been informed about sumatriptan while attending a scientific meeting; they had not received information directly by Glaxo [23]. The mass publicity surrounding the launch of this drug and others led to discussions in the Dutch and French parliaments on the subject of what was clearly regarded as clandestine advertising [22,24]. It may be added however that this form of publicity does not cease with the licensing of the product, but can continue for some time afterwards, as prescribing begins; following the approval of sumatriptan in the Netherlands Glaxo organized a press conference which led to the appearance of further articles in newspapers and magazines.

Articles in newspapers and news items on television reach a very broad spectrum of people, naturally including health professionals, researchers and patients. Studies have shown that communication through the mass media is one of the means by which researchers become aware of interesting scientific publications [7] and physicians are alerted to new developments in treatment [5,6]. Not unexpectedly, negative publicity can markedly influence drug use as well. Jones et al showed a drastic decline in the use of the contraceptive "pill" after a sudden wave of negative publicity in the 1970s [25]. A study of Soumerai et al showed that both the professional and lay media were important channels of communication in alerting health professionals and parents about the relationship between aspirin and Reye's syndrome [26].

In this paper we explore the role of the lay press as a communication channel for pharmaceutical companies. The following ques-

tions are addressed: How influential is the provision of information about medicines directly to the public according to the pharmaceutical industry and what is the role of the lay press? Which methods are used by pharmaceutical companies to attract the attention of mass media journalists?

5.2 METHODS

To answer the questions defined above, we approached the public relations officers of the ten pharmaceutical firms with the highest sales figures in the Netherlands and requested an interview. Of these ten pharmaceutical companies, eight had a person specifically responsible for contacts with the press. We conducted in-depth interviews with seven of the eight; one respondent is missing because he was not available during the period of this research project. One company of Dutch origin was added; the remaining firms had their main seats abroad.

The interviews lasted one to two hours. They consisted of open questions regarding contacts with the press, as well as a number of statements to which the respondents were asked to react. These statements came from the literature and from interviews which we had previously conducted with journalists; their purpose was to elicit further information and views as to the way the press officers work, as well as an opinion as to the veracity of the statements. The interview topics and the use of the statements were pre-tested in a interview with the former P.R officer of a pharmaceutical company.

Guarantees for the anonymity of the respondents encouraged the freest possible reactions on sensitive issues. All interviews were tape-recorded and fully transcribed. The transcripts were analyzed by the first author using a theme-list, which was created after reading the transcripts and making use of the research questions. The information in the transcripts was first coded by using this theme-list; thereafter all the information obtained from all the respondents was analyzed per theme, looking for differences and similarities in the explanations given and the answers provided by the respondents.

5.3 RESULTS

According to the respondents, information to the general public has become progressively more important for two major reasons. Firstly, patients are becoming increasingly emancipated; the

respondents indicated that information is important in this emancipation process, *"Patients have a right to make their own choices"*. Secondly, the pharmaceutical industry has a weak public image. This image, in its view, has to be changed.

Patient emancipation

According to the respondents, pharmaceutical companies feel that they are justified in informing the public about certain preventable diseases and the means of dealing with them by using drugs. The examples given related to products used to treat or prevent hypertension or osteoporosis, drugs to relieve menopausal complaints, preparations to assist in the withdrawal of smoking, drugs to alleviate diabetes (and hence prevent its complications) and contraceptives. All such information is regarded as promoting the emancipation of the patient, i.e. his or her ability and wish to obtain and choose appropriate treatment. One respondent indicated that it is sometimes more efficient to communicate on such matters with a patients' association than through the general media.

Image of the pharmaceutical industry

Most respondents indicated that they perceived the image of their industry in the eyes of a lay audience to be neutral or absent, in the sense that the companies which they represent were seldom mentioned in the lay press. One respondent thought the public had a negative image of his company.

The image of the pharmaceutical industry as a whole is perceived as weak. *"The pharmaceutical industry is rich, earns too much money and medicines are expensive."* This image is considered by the respondents to be due to the fact that companies have not been very open in communicating with a lay audience. One respondent indicated that companies have been too arrogant in the past to talk to the general public. Another respondent stated that pharmaceutical companies have no experience in talking to a lay audience with regard to prescription drugs. According to certain of the respondents, the trade association should play a more active role to improve the industry's image.

Role of mass media journalists

The respondents confirmed that the mass media play an important role in the diffusion of information from the pharmaceutical industry towards the general public to improve both patient emancipation and the image of the industry. Journalists are supplied with information from the pharmaceutical industry because industry itself cannot address the public directly, particularly since public advertisements for prescription drugs are illegal.

Although health professionals may also obtain some of their information through the mass media, the respondents did not regard this as a significant reason for supplying journalists with information; health professionals are informed through the usual channels, e.g. drug company representatives. According to the respondents, physicians do not appreciate it when they are confronted with patients coming to the surgery with questions about a new drug before they themselves are informed about it. It seems, therefore, important to inform health professionals before journalists are given information.

Kind of information supplied by pharmaceutical companies

Information about drugs during development and before approval. According to the respondents, pharmaceutical companies do not communicate major breakthroughs early in research to the press because the development of a new medicine takes between 10 and 15 years and only a few drugs undergoing investigations may in fact ever reach the market. Information about breakthroughs in research might therefore create false hopes. Sometimes information about experimental compounds which bear promise of becoming new drugs is published in newspapers or magazines but the respondents indicated that journalists did not get this kind of information directly from the company; their source of information on such matters was the scientific literature. One respondent did however indicate that when a promising drug is under development for a disease which is "difficult" to diagnose, and therefore perhaps often under-diagnosed, the company starts during the research stage to bring information on the disease to the attention of the physicians and journalists, so as to create disease awareness.

The respondents had different opinions as to possible effects of current media publicity on the regulatory authorities before and during the registration phase. Some respondents thought that publicity in the mass media about a promising new cure would have no effect at all on the regulatory process, while one respondent presumed a positive effect; two others, on the other hand, thought that there might be negative consequences for the approval procedure. One respondent in the latter category told us that he wrote a letter to the Regulatory authorities after publicity about a drug in the registration phase to point out that the company had nothing to do with the publicity in the mass media.

Newly approved drugs. According to the respondents, the press will be informed about a newly approved drug only in certain special cases. First of all the new drug must special in some way, having for example an entirely new active component, a new

mechanism of action or a completely new mode of application, or it must be a product of interest for a large lay audience in the Netherlands. To bring such a new product to the attention of the public serves two primary functions simultaneously: it informs the lay audience of the facts, and it benefits the company's image.

Where a newly marketed drug does not in fact represent a true innovation, some other event may be exploited to make the topic newsworthy and attract the attention of the press. The introduction may for example be combined with culmination of a newsworthy research project in the same field.

On occasion companies organise a press conference to introduce a new drug. To make the event even more newsworthy, experts speak at the press conference and answer questions. These experts, notably independent (clinical) researchers and medical doctors who have already used the new drug, are able to present the information in a more objective manner than could scientists or others from the company itself. The journalist receives a press kit after attending the press conference, either routinely or on request. Sometimes the introduction of a less spectacular new drug is accompanied by mailing a press kit to journalists only. Such a press kit usually contains a fully prepared press release, a product profile and sometimes quotations from experts and/or scientific papers.

Problems with drugs. According to most respondents, if something goes wrong with one of the company's products, the question of informing the press about it will depend on the nature of the problem which has arisen. If a recall procedure is necessary, the prescribers and pharmacists will first be informed and only after that (if at all) the national press. Most of the respondents indicated how clearly the decision to notify the mass media depended on the situation and the product. According to one of the respondents it is seldom necessary to use the mass media in order to inform the users of the drug about its withdrawal because the Dutch health care system is well organised and the pharmacist can trace and inform the users very easily, *"I would rather have a pharmacist informing a patient personally, than a patient reading it in the newspaper"*. If a recall procedure through health care professionals is not sufficient, for example if the problem concerns an OTC (i.e. free sale) product, the mass media provide the channel through which the users can be warned; in that case the companies will indeed inform the media.

All respondents indicated that in the event of a product recall they would be prepared to answer questions from journalists. In

their view it is important to honest and open. One of the respondents did however stress that *"if it is not necessary in terms of the safety of the users we do not inform the press, because it is always bad publicity. But if the press calls us, we will tell them what has happened".*

Contacts initiated by pharmaceutical companies

Companies use different methods to inform journalists (Table 2). Personal contact is very important, according to all respondents, because "the journalists know you and can find you and the other way round, you know them and how to find them". To know each other breaks down barriers. However, one respondent warned against misusing such personal contact.

Table 2
Means used by pharmaceutical companies to inform journalists

Personal contact	interviews
	working visits
	small workshops
Invitations for scientific conferences	
Press conferences	very special events
Mailings	scientific papers
	annual reports
	specially prepared magazines
	press releases from international conferences

All the respondents invited journalists to events such as conference, a workshop or a working visit. Some of these events were specially organized for journalists. The respondents stressed that it is up to the journalists themselves to decide if they will visit the event and whether they will subsequently write about it. These invitations and meetings serve two different functions; specifically they serve to transmit information, but in a more general sense they enable the company to maintain contact with the journalists concerned.

Some respondents suggested a need for caution in such invitations to journalists: *"Journalists are swamped with invitations. If they accept your invitation and learn nothing new or useful they never come again and the relationship is spoiled".*

Some of the respondents indicated that they preferred communicating with science or medical journalists because such journalists have more background information than, for example, general feature writers. One respondent noted that the circle of science writers in the Netherlands is very small and that this group gets very much information from different sources, making it difficult to attract their attention to any specific matter. Another respon-

dent preferred in some cases to talk to science writers from quality newspapers only.

Contacts initiated by journalists

Most of the respondents shared the opinion that journalists should contact the company more often, firstly since articles about their company or its products tended to appear in the press without the writer having consulted or checked his facts and interpretations, and secondly because the viewpoint of the pharmaceutical industry usually received too little attention.

Co-operation between companies and journalists/editors/publishers

Sometimes a collaboration exists between companies and journalists, editors or publishers. One respondent indicated that his firm financed an enclosure in a family magazine. This enclosure was prepared by the editors but paid for by the company and contained information about a particular group of medicines. The latter included not only preparations from the company itself but also drugs produced by its competitors. The enclosure was prepared as a form of patient education. Similarly two respondents informed us that they had financed the costs of a telephone line for answering questions about a disease and medication from readers of a particular article in a family magazine and people who had watched a T.V program on a certain subject.

A different form of collaboration which does exist, though it had not been experienced by our respondents themselves, is the advance mailing to physicians and pharmacists of an entire issue of a family magazine containing information about one or more medicines. This co-operation was the subject of varying opinions. Some of the respondents had a positive attitude because physicians and pharmacists are informed in advance about this publication which will be reaching their patients. Others had a negative attitude, considering that this should not be allowed and that something had to be done stop this form of mailing. One respondent said he would send the magazine only at the request of the pharmacist or physician. Others stated that health professionals do not appreciate this kind of mailing.

5.4 DISCUSSION

Information from the pharmaceutical industry to the general public has become increasingly extensive and emphatic. Pharmaceutical companies consider that it is important to inform a lay audience about their products and about the diseases for which they can be used. In this study two reasons were given to explain this increasing interest of pharmaceutical companies in a lay audience, i.e. the emancipation of patients and the desire of the industry to improve its weak public image. The first of these motives is reflected not only in the provision of data on drugs and treatments but also in the belief that one can should in some instances promote so-called disease awareness among the public. Various authors have pointed out that some campaigns conducted by industry in the U.S.A have focused on the need to increasing patient visits to the physician for under-diagnosed conditions [16,20]. In one advertising campaign, for example, it was stated that most of the people with a depression do not ask for professional help; it would be better for them if they in fact did seek professional assistance. Eli Lilly, the company selling the antidepressant Prozac,® in fact paid for these advertisements [20]. Information to a lay audience is sometimes an attempt to market a product directly to consumers [18]. If patients are aware that a new or better therapy now exists or that a disease can now be treated or prevented they can visit their physician and ask him or her to prescribe the product concerned; a so-called market-pull is thus created [27]. Direct marketing focused at patients offers good possibilities because the patients are emancipated and they might influence their physician who is thinking about giving them a prescription drug [28, 29]. Another argument to communicate with a lay audience is that, according to Spilker, "public opinion must be recognised and respected by the drug industry as an important force (...) because of the influence the public has on shaping new regulations and affecting drug-pricing policies .." [29].

There seems to be some consensus between our respondents about the correctness of informing the public about certain drugs available only on prescription, for example contraceptives, hormonal therapies to prevent osteoporosis, and antihypertensives. The lay press, both daily newspapers and family magazines, can play an important role in informing a lay audience about diseases and new or improved products. If the lay press pays attention to these products many potential 'users' can be reached. On the other

hand, there is a minority opinion that where patient groups are well organized it can more effective to supply their organizations with information. It is notable that this comment came from a respondent who has much contacts on a particular therapeutic area in which patients are well organized.

The respondents in our study all work for large and innovative pharmaceutical companies. From the point of view of these companies different types of newsworthy events can be distinguished. First of all a major "breakthrough" in the research department might be considered newsworthy. The respondents indicate, however, that early "breakthroughs" in research are not communicated directly to mass media journalists because publicity might create false hopes about promising new cures not (yet) available. Given the uncertainty and equivocality of product development, and the long period needed for scientific and technical development there is a concern within companies not to make premature claims [29].

However, articles do appear in newspapers on a new drugs still in the research phase. Some of these may be based on information obtained directly from the scientific literature, but where they relate to a product approaching the stage of approval and introduction they may reflect information sent to journalists by the company. The former type of newspaper article may for example devote attention to the initiation of research in humans, to study the drugs' effectiveness [30]. The latter type is more commonly devoted to drugs which are already approaching the point of final assessment. However there are exceptions; we encountered in one of the magazines an article about an entirely new type of oral contraceptive, not yet approved, on which human research was still apparently in an indecisive phase; in this article women were called up to enter a study with this new drug [31]. These exceptional cases related to small firms on the periphery of the pharmaceutical industry.

When an innovative medicine is approved, a press conference is sometimes organized. It appears to be common, on such an occasion, to invite independent scientists and physicians to give information about the new product to the journalists who attend. Because science journalists have a sceptical attitude towards information coming directly from the industry [8], it is considered more effective for companies to let non-industry experts provide the journalists with information. "If I can find a scientist at the University of Toronto to say that this product has fewer known health hazards than the existing products ..[.] it is a better thing" [32].

Another newsworthy event might be when something goes wrong with the company or one of its products. In general, it depends on the kind of problem whether the press will be informed by the company itself. All respondents indicate that they were prepared to answer questions from the press, though one pointed to a preference for relying on the professional health care system to inform users of the product concerned. Sturkenboom et al. show, however, that the mass media do play an important role in warning the users of a prescription drug quickly, and that not all users can be traced and will be informed through the health care professionals, even in the Netherlands where health care is intensive and well organised [33]. On a matter such as this, one must bear in mind that the results of this study are based on interviews with the public relation officers of pharmaceutical companies; although we did guarantee the respondents anonymity, there might have been a tendency to provide socially desirable answers.

Sometimes pharmaceutical companies "warn" physicians and pharmacists that questions about a particular prescription drug can be expected because a television program or family magazine will pay attention to the drug or its indication [34,35]. Wyeth, for example, sent to all family physicians in the Netherlands an issue of a family magazine in which hormonal therapy for menopausal complaints was discussed [36]. In the accompanying letter the marketing planning manager wrote that the publication of this issue coincided with the introduction of their new hormonal product, and that questions from patients could be expected. Family magazines and pharmaceutical companies sometimes co-operate; a company may finance an enclosure about an illness or a drug, or organise a telephone answering service [37].

The results of this study show that pharmaceutical companies do approach mass media journalists with information about products in various ways at different moments. The respondents indicate that they are both cautious and selective in the information they communicate because of their responsibility towards the general public and their relationship with journalists.

Journalists working for daily newspapers claim to be critical because they realise that the information coming from the pharmaceutical industry may be one-sided. Even if the information which companies send is of itself sound and reliable, one is unlikely to know what information is being withheld. It is notable that in most newspaper articles in which a pharmaceutical company is mentioned another source is cited as well [8].

Information from the pharmaceutical industry to the general public has become more extensive and emphatic. As long as independent and critical journalists and editors decide for themselves whether information about drugs coming from pharmaceutical companies is newsworthy enough to be published, what reaches the printed page is likely be genuine news and not hidden advertising. Journalist should make very clear to the reader which sources have been used to compile the article, so that can himself decide whether he wishes to regard the information as reliable.

Although Chetley [15] questions the implementation of ethical codes, we would welcome a decision to apply the rules of conduct of the pharmaceutical industry, with respect to the information about drugs, hospitality and gifts (as described in the "European Code of Practice for the Promotion of Medicines" [12]) not only to the relationship between companies and health professionals but also to their relationship with mass media journalists.

Finally, it is clear that information to the public on prescription drugs will never be more than secondary to the information which goes to doctors and pharmacists. The basis for sound drug use will be the proper information of health care professionals about the latest developments and new drugs, whether the information be favourable or otherwise. They should be able to educate their patients about the pros and cons of a particular therapy. Patients who ask for (new) drugs in response to mass media publicity may know exactly the name and supposed merits of the drug but at the same time they may be uninformed as to its possible side-effects, interactions and contraindications.

REFERENCES

1 Durant JR, Evans GA, Thomas GP. The public understanding of science. Nature 1989;340:11-14.

2 Jong- vd Berg LTW de, Haaijer-Ruskamp FM, Trigt AM van. Evaluatie van een voorlichtingsbrochure over geneesmiddelen en de overgang Pharm. Weekbl. 1989;124:870-876.

3 Jong- vd Berg L. de, Waardenburg C. Geneesmiddelengebruik tijdens de zwangerschap. Groningen: Styx-publications, 1991.

4 Visser TJ. Geneesmiddelenvoorlichting. Een overzicht. Leiden: Instituut voor Huisartsgeneeskunde en Wetenschapswinkel RU Leiden, 1989.

5 O'Keefe MT. The first human heart transplant-A study of diffusion among doctors. Journalism Quarterly 1969;46:237-242.

6 O'Keefe MT. The mass media as souces of medical information for doctors. Journalism Quarterly 1970;47:95-100.

7 Phillips DP, Kanter EJ, Bednarczyl B, Tastad PL. Importance of the lay press of medical knowledge to the scientific community. New England Journal of Medicine 1991;325(16): 1180-3.

8 Van Trigt AM, de Jong- vd Berg LTW, Haaijer-Ruskamp FM, Willems J, Tromp ThFJ. Journalists and their sources of ideas and information on medicines. Soc. Sci. Med. 1994;38(4): 637-43.

9 Rocho 1975:84-85 etc. cited from Ericson R.V, Barabek P.M, Chan J.B.L. Negotiating control. A study of news sources. Toronto: University of Toronto Press, 1989.

10 Anonymous. Overheid dwingt farma-industrie tot rechtstreekse benadering publiek. Bijsluiter 1991;8(4):7

11 Steinbrook R, Lo B. Informing physicians about promising new treatments for severe illnesses. JAMA 1990;263(15):2078-82.

12 European Federation of Pharmaceutical Industries' Associations. European Code of Practice for the Promotion of Medicines. EFPIA, Brussel, 1992.

13 Richtlijn 92/28/ EEG van de Raad van 31 maart 1992 betreffende reclame voor geneesmiddelen voor menselijk gebruik. Publicatieblad van de Europese Gemeenschappen Nr L 113, p13-18.

14 Chetley A. Healthy business. London: Zed Books Ltd., 1990.

15 Anonymous. Ethical criteria for medicinal drug promotion. Essential Drug Monitor 1994, 17, 16-17.

16 Lexchin J. Pharmaceutical promotion in Canada: Convince them or confuse them. Int. J. Health Services 1987;17(1):77-89.

17 Morris LA, Brinberg D, Klimberg R, Millstein L, Rivera C. Consumer attitudes about drug advertisements for medicinal drugs. Soc Sci Med 1986;22(6):629-638.

18 Moser M, Blaufox MD, Freis E, et al (1991). Who really determines your patients' prescriptions? JAMA 1991;265 (4):498-500.

19 Nelkin D. How to doctor the media. New Scientist 1986, 20 november p 51-56.

20 Meijer - van Putten JB. Maybe you're sick (Berichten uit het buitenland). Ned. T. Geneeskunde 1994;138 (20): 1042-1043.

21 Dukes MNG. The seven pillars of foolishness. In: Side effects of drugs annual,8. Dukes M.N.G. (ed.). Amsterdam, New York, Oxford: Elsevier Science Publishers 1984.

22 Anonymous. Sumatriptan French media hype under fire. Scrip 1993, no 1787 p18

23 Anonymous. Glaxo replies on sumatriptan in France. Scrip 1993, no 1789, p22
24 Anonymous. Kamervragen over sluikreclame voor geneesmiddelen. Pharm Weekbl 1992: 127 (29): 736.
25 Jones EF, Beniger JR, Westoff CF. Pill and IUD discontinuation in the United States, 1970-1975: The influence of the media. Family Planning Perspectives 1980; 12: 293-300.
26 Soumerai SB, Ross-Degnan D, Spira Kahn J. Effects of professional and media warnings about the association between aspirin use in children and Reye's sundrome. The Milbank Quarterly 1992; 70 (1): 155-182.
27 Wiedenhof N. Industrievoorlichting. Een inleiding. Muiderberg: Dick Coutinho, 1988.
28 Peeters-Udding LM. Publieksreclame voor geneesmiddelen op recept. Pharm. Weekbl. 1991;126(40):1004-6
29 Spilker B (1989). Multinational Drug Companies. New York: Raven Press (chapter 1,29,30).
30 Articles in Dutch daily newspapers:
Anonymous. Diermedicijn in onderzoek tegen artrose bij mensen. NRC Handelsblad 27 August 1991, 2
Anonymous. Middel tegen artrose. Nieuwsblad van het Noorden 27 August 1991, 5.
Anonymous. Hondepil voor mensen. Telegraaf 27 August 1991, 1
31 Van Marle M. Wordt 'B-Oval' de nieuwe pil die borstkanker voorkomt? Margriet 1991, no 36 (30 August - 6 September), p41-48.
32 Ericson RV, Barabek PM, Chan JBL. Negotiating control. A study of news sources. University of Toronto Press, Toronto, 1989.
33 Sturkenboom MCJM, De Jong-van den Berg LTW, Cornel MC, Stricker BHCh, Wesseling H. Communicating a drug alert - a case study in the Netherlands- Eur J Clin Pharmacol 1994; 47: 125-132.
34 Hostee HH. Geneesmiddelreclame [letter]. Medisch Contact 1991; 46 (12): 358.
35 Van Everdingen JJ, Krol JC. Verborgen verleiders (pp 191-201). In: De wet tot behoud van waarheid. Uitgeverij Belvedere, Overveen, 1991
36 Wyeth Laboratoria bv. Letter to physicians (ref jn/91.020, dd 4 February 1991)from Dr. P.T.A. Bakker, Marketing Planning Manager, about the Introduction of Prempak and an issue about menopausal complaints in a family magazine.
37 Van Trigt AM, De Jong-van den Berg LTW, Pasman M, Haaijer-Ruskamp FM, Willems J, Tromp TFJ. Information about medicines in family magazines. Pharmacy World & Science 1995; 17 (2): 48-53

CHAPTER 6

INFORMATION ABOUT DRUGS IN FAMILY MAGAZINES[1]

Abstract

Because of the important role which family magazines can play in the diffusion of medical information and information regarding drugs to a "lay audience" we describe in this article what kind of drugs are discussed in the family magazines and which information regarding these drugs is given. Furthermore we look into the information sources for journalists; special attention is paid to the role of the pharmacist, is (s)he recognized by journalists as one of the experts on medicines?

Two approaches were used in order to answer the above described research questions, a content analysis of family magazines supplemented with in-depth interviews of journalists.

The results of this study show that gynecological products as well as drugs for the central nervous system receive much attention in family magazines. The kind of information given about medicines is limited. Only a proportion of the publications pay attention to the side effects of a drug therapy. Therefore health professionals confronted with patients asking questions about drugs in response to publications in family magazines should realize that the patient knows the name of a drug but is seldomly informed about other aspects of the therapy, such as side effects.

In the provision of information physicians and medical specialists play an important role as sources of information for journalists. There is, however, until now no role for the pharmacist as source of information on medicines in family magazines.

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6.1 INTRODUCTION

The general public as well as health professionals use many different sources of information about health, illness and drugs. Results of studies show that family magazines and daily newspapers not only play a role as source of medical information for the general public [1,2,3], but inform physicians and other groups of health professionals as well [4,5,6]. Family magazines are more often mentioned by the general public as a source of information on medicines than for example pharmacists [1,2].

The attention paid to science in general in the family magazines is comparable to the attention paid to this subject in the daily newspapers; approximately 5% of the space is devoted to this subject. In the family magazines medical news is the most important category of science news [7]. Durant et al. showed that the general public is very interested in news about new medical discoveries [8].

In the Netherlands more than 50% of the women over 18 years of age are reached by the family magazines [9]. Magazines supply their readers with all kinds of information. According to Hermes [10], readers learn from articles and the "question and answer" section how others solve problems in the field of relationships, illness and grief. The readers are especially interested in human interest stories and the "question and answer" section [10]. According to a physician working for a family magazine, the magazine receives in particular many letters with medical questions [11]. Physicians and medical doctors state that once a new drug or new therapy is discussed in the mass media they receive more questions about the new therapy [12]. One gynecologist stated that family magazines were very helpful in introducing the sub-50 contraceptives in the Netherlands by giving attention to these new oral contraceptives. The women were advised to ask their physicians for a 'low- dose pill' [13]. Both Wellings and Jones et al. showed a decline in the use of the "pill" after negative publicity in the mass media [14-15]. The lay media were also important communication channels in alerting health professionals and patients about the relationship between aspirin and Reye's syndrome [16], and to inform both patients and health professionals that the post-therapy contraception period after acitritin therapy was extended from two months to two years [17].

Because of the important role which family magazines can play in the diffusion of medical information and information regarding drugs to a "lay audience" we address the following questions:

- What kind of drugs are discussed in the family magazines and which information regarding these drugs is given?
- Where do the journalists get their information?
  The World Health Organization recommends that the pharmacist should play a central role in the provision of advice and information to patients and the general public on the use of medicines [18]. Therefore, in this study special attention is paid to the role of the pharmacist, is he recognized by journalists as one of the experts on drugs?

6.2 METHODS

Two approaches were used in order to answer the above described research questions, a content analysis of family magazines supplemented with in-depth interviews of journalists. The content analysis was performed to detect publications mentioning medication in three family magazines in order to determine the kind of drugs discussed and the information given. Secondly, in-depth interviews were conducted with journalists who write about drugs in family magazines to obtain background information on the way they work, which sources they use and how they select the subjects for their stories.

Content analysis

The three Dutch family magazines used for the content analysis (Libelle, Margriet and Viva) were chosen because they contain medical information in almost every issue and because they are read by many women. The total circulation of these three magazines is 1.430.000 copies weekly [9]. Because readers often pass on the magazine to someone else, the number of readers may be much higher than the circulation indicates.

All publications in which medication was discussed over a period of one year (June 1991 - May 1992) were selected. The publications were coded with respect to several topics. First of all we differentiated between the various types of publications (question and answer section, articles and letters to the editor). Secondly, we classified the drugs mentioned by making use of the Anatomical, Therapeutical, Chemical (ATC) classification system. This system has been commonly used in drug utilization studies in Europe. In the ATC classification every preparation is given a code number consisting of up to five elements [19]. The original system consists of 14 main (anatomical) groups; we added three groups, one for homeopathic drugs, one for drugs not yet available in the Netherlands and one group for drugs in general. The 17 categories in-

cluded were: Alimentary tract and metabolism, Blood/bloodforming organs, Cardiovascular drugs, Dermatologicals, Genito urinary system and sex hormones, Systemic hormonal preparations (excl. gynecological drugs), General antiinfectives, Antineoplastic and immunosuppresives, Musculo/skeletal, Central Nervous System drugs, Antiparasitic products, Respiratory drugs, Sensory organs, Various, Homeopathic and alternative drugs, Drugs in general, and not yet available drugs. The data were analyzed on the first and second level of the ATC classification system.

To establish the agenda of the family magazines concerning drugs, the 17 main groups of the ATC system (first level) were ranked according to their frequencies. For all analyses regarding agendas, the 17 main groups of the ATC system (first level) were used. The second level of the ATC classification system was used for descriptive statistics only. A total of 89 different subclasses (second level) can be distinguished in the ATC system used.

Furthermore, we coded the name used to address the drug. Here we differentiated between four categories of names, i.e. brand name, generic name, group name (e.g. hormones) and functional name (e.g. oral contraceptives).

To study the kind of information given about drugs, we provided codes to indicate if information was given about the indication, side-effects, or contra-indications. We also checked whether the reader was advised to consult a physician. Furthermore, we collected information on the sources mentioned in the publications, whether they were patients, physicians, pharmacists or others.

Finally we determined whether the drugs most frequently discussed in the family magazines ("drug agenda of the family magazines") were also the drugs most frequently discussed in the newspapers ("drug agenda of the newspapers"). The rank order of the ATC main groups in newspapers was established as a part of our overall study and is described in detail elsewhere [20]. The agreement in ranking was tested using Spearman Rho (R_S).

Interviews

Three journalists interviewed in this study were responsible for publications about drugs in family magazines included in the content analysis. A fourth journalist worked for a Flemish family magazine not included in the content analysis. In the interviews we asked the journalists about their sources of ideas and information, and the way they select items/topics for publications. Futhermore, we asked the respondents what kind of experts they consult

when they need information on medicines. We also talked with the respondents about their training.

6.3 RESULTS OF THE CONTENT ANALYSIS

In the three family magazines 255 publications were found containing information about drugs. Only minor differences were found in the contents of the three magazines studied. Most information (62%) was found in the question and answer section; 25% in articles, 8% in letters to the editors and 5% in small news items.

The ATC main group most frequently discussed in the family magazines was 'Genito urinary system and sex hormones' (32% of all publications). Within the main ATC group of the gynecological drugs the 'Sex hormones and stimulants of the genital system' was the most frequently mentioned subgroup, discussed in 26% of all publications (Table I). Drugs for the central nervous system were the second most frequently discussed ATC main group; 40% of the publications discussing central nervous system drugs, paid attention to the psycholeptics. Four other groups were discussed in more that 10% of the publications (Table 1).

For these six ATC main groups most publications were found in the question and answer section, except in the case of the homeopathic drugs. This latter group was most often discussed in articles (Table 2). In 70 publications (27%) one or more over-the-counter (OTC) products were discussed.

Gynecological drugs were proportionally more often discussed alone then the other five major ATC main groups. The gastrointestinal drugs were most frequently discussed in combination with other ATC main groups.

Table 1
Six major main ATC groups and subclasses most frequently discussed in three family magazines (n=255).

ATC main group	ATC sub-class	ATC code	number of publications
Genito urinary syst./sex horm.		G	81 (32%)
	Sex hormones and stimulants of the genital system	G03	67
Central Nervous System		N	45 (18%)
	Analgesics	N02	16
	Psycholeptics	N05	18
General Antiinfectives, systemic		J	37 (14%)
	Systemic antibiotics	J01	25
Alimentary tract/metabolism		A	33 (13%)
	Vitamins	A11	18
Homeopathic and altern. drugs		Y	29 (11%)
Dermatologicals		D	28 (11%)

Table 2
Kind of drug classes discussed in different sections of three family magazines

ATC main group	total	question/ answers	article	letter	news
Genito urinary syst./sex horm.	81	52 (64%)	21 (26%)	2 (3%)	6 (7%)
Central Nervous System	45	23 (51%)	16 (36%)	5 (11%)	1 (2%)
General Antiinfectives	37	25 (68%)	10 (27%)	2 (5%)	-
Alimentary tract/metabolism	33	23 (70%)	10 (30%)	-	-
Homeopathic and altern. drugs	29	10 (34%)	18 (62%)	1 (3%)	-
Dermatologicals	28	19 (68%)	7 (25%)	2 (7%)	-

The indication was given in 84% of the publications. Whereas side-effects were mentioned in about a third of the articles (Table 3). The 16% that contained no information on the indication, were concerned with the occurrence of side effects of drugs.

Table 3
Kind of information on medicines in family magazines, (N=255)

kind of information		number of publications
name		255 (100%)
	group name	170 (67%)
	functional name	107 (42%)
	generic name	49 (19%)
	brand name	49 (19%)
indications		215 (84%)
side effects		94 (37%)
contra indications		5 (2%)
other solutions		85 (33%)

Side effects were most often discussed in relation to drugs for the central nervous system; 47% of these publications contained information on side effects. In only 24% of the publications concerned with general antiinfectives and 18% of the articles with information on dermatologicals side effects were discussed (Table 4). Whether or not side effects were discussed in the publications depended on the drug class discussed (Chi-square = 14.08, df = 5, $p < 0.05$).

Table 4
Frequency side effects are discussed in family magazines in relation to the six ATC main groups

ATC main group	total	side effects discussed
Genito urinary syst./sex horm.	81	31 (38%)
Central Nervous System	45	21 (47%)
General Antiinfectives	37	9 (24%)
Alimentary tract/metabolism	33	13 (36%)
Homeopathic and alter. drugs	29	4 (14%)
Dermatologicals	28	5 (18%)

Chi-square = 14.1, df = 5, $p < 0.05$

In 35% of all publications the reader was advised to consult a physician to discuss a complaint or therapy. In another 11% the readers were advised indirectly to consult their physician; in these publications it was for example stated that prescription drugs were necessary. In 8% of the publications a physician was already consulted and the magazine was asked for a second opinion. In the question and answer section the readers were advised to consult their physician (directly or indirectly) in 55% of the publications.

Other solutions (no pharmaceuticals) were mentioned in one third of all publications. The other solutions mentioned were among others drinking milk instead of taking calcium tablets and using a "pad and buzzer" to train a bed-wetter.

The information that was given about drugs came from a variety of sources. In 63 publications a patient (expert of experience) was cited and in 161 publications (63%) a physician or medical doctor was mentioned as source. Pharmacists were not cited as source at all. The combination of both the expert by experience and physician was found in a limited number of publications (15 publications).

The name most often used was a group name (Table 3). A functional name was found in 107 publications (42%), and a brand name was used in about a 19% of all publications. In 5% of all publications the brand name was the only name used. In 26 (38%) of the publications mentioning OTC products the brand name was used to address the product; whereas in only 12% of the articles which discussed prescription drugs a brand name was used. A brand name was significantly more often used in relation to an OTC product than a prescription drug (Chi-square = 19.98, df = 1, $p < 0.05$).

For the homeopathic drugs the brand name was used in 38% of the publications. The dermatologicals and drugs for the central nervous system were both in approximately a third of the publications mentioned with a brand name. A group or functional name

Table 5
Frequency of different kinds of names to address a drug by ATC main groups

ATC main group	total	brand name		generic name		group and or functional name	
		n	(%)	n	(%)	n	(%)
Genito urinary syst./sex horm.	81	10	(12)	10	(12)	78	(96)
Central Nervous System	45	14	(31)	8	(18)	39	(87)
General Antiinfectives	37	3	(8)	5	(14)	37	(100)
Alimentary tract/metabolism	33	2	(6)	15	(45)	20	(61)
Homeopathic and alter. drugs	29	11	(38)	4	(14)	23	(79)
Dermatologicals	28	9	(32)	15	(54)	13	(46)

Table 6
Comparison of drug discussed in family magazines with drugs discussed in newspapers, (comparison of the agenda's)

ATC main group	family magazines (n=255)		newspapers (n=178)	
	n	(rank)	n	(rank)
Genito urinary syst./sex horm.	81	(1)	25	(2.5)
Central Nervous System	45	(2)	25	(2.5)
General Antiinfectives	37	(3)	36	(1)
Alimentary tract/metabolism	33	(4)	8	(8)
Homeopathic and alter. drugs	29	(5)	13	(6)
Dermatologicals	28	(6)	3	(13.5)
Drugs in general	17	(7)	15	(5)
Respiratory drugs	15	(8)	8	(8)
Cardiovascular drugs	12	(9.5)	8	(8)
Antineoplastic/immunosuppresives	12	(9.5)	7	(10.5)
Systemic hormonal prep.	10	(11.5)	3	(13.5)
Not yet available drugs	10	(11.5)	3	(13.5)
Blood/blood forming organs	13	(13)	19	(4)
Musculo/skeletal	5	(14)	2	(16)
Sensory organs	4	(15)	0	(17)
Antiparasitic products	3	(16)	3	(13.5)
Various	0	(17)	7	(10.5)

$R_S = 0.71$. $p < 0.05$

was used in all publications for general antiinfectives and antibiotics, accompanied by a brand name in 8% (Table 5).

The agenda of the magazines is clearly related to the drug agenda of the newspapers, Spearman's rho is 0.71 (Table 6). The three main ATC groups most often discussed were prominent in both newspapers and family magazines: gynecological drugs, central nervous system drugs and general antiinfectives and antibiotics. The family magazines did however pay proportionally more attention to homeopathic drugs.

6.4 RESULTS OF THE INTERVIEWS

The background of respondents is diverse; two have a university degree (one had studied mass communication and the other one Dutch language). Only one of the respondents got some training in the medical field; she attended a few medical lectures. Their experience is journalism varied from 7 to 24 years.

The journalists reported to use different sources to get ideas for articles on health, illness and drugs. Letters from the readers, ideas brought up by colleagues, daily newspapers and press releases from different sources were mentioned as important sources of ideas. Only one respondent considered scientific and medical journals to be important sources of ideas and information.

The magazines receive many letters from their readers. One of the respondents estimates that the magazine receives 200 letters a week, of which about two thirds concerned medical questions.

Pharmaceutical companies supply the journalists with information and invitations. They send press releases and company magazines; sometimes journalists are invited to a press conference or congress. One respondent indicates that there is sometimes a form of co-operation between a company and the magazine. A company finances an enclosure about an illness or drug, or organizes a telephone answering service.

The questions and answers section is an important channel for health-related information. For the selection of questions and the answers the editors seek advice from physicians and medical specialists as experts. Some magazines have physicians on their staff. Most experts were consulted on a regular basis because the journalist had good experiences with them: *"If someone knows our magazine, the way we work and the language we use it is very convenient to consult him or her"*. One of the respondents indicated that it is sometimes difficult to find an other expert because not all experts are suitable as source of information.

All the respondents on occasion interviewed patients. These patients were found through patients' organizations and letters which the editors of the magazine receive. Sometimes a physician was asked to approach a patient.

Pharmacists were mentioned by two of the four respondents as a information source on medicines. Physicians were mentioned by all the respondents.

The most important criterion for selection is the supposed interest of the audience in the topic. The interest of the readers is known by the editors from the letters they receive and by experience. Therefore some topics are discussed in the magazines on a regular basis; contraceptives are for example discussed often, because 'new' readers ask 'old' questions. The topics for the question and answer section and the articles were not only inspired by these letters but also by the time of year. Examples of a season-related subjects are sun allergy or influenza. On the other hand, some topics can not be discussed in summertime, for example life threatening diseases, because the editors expect their readers to read the magazine on holiday.

6.5 DISCUSSION

Besides providing general information about health and illness, family magazines indeed pay attention to information on drugs. In the selection of topics to write about, the major concern of the journalists is the interest of their readers. Family magazines are targeted at women and are read by far more women than men. It therefore seems logical that the drugs most often discussed are gynecological products. Oral contraceptives, belonging to this category, are used by approximately 1,4 million women in the Netherlands [21]. The attention paid to tranquilizers is also related to the consumption of these drugs. Approximately 12% of the women used tranquilizers according to a study done in 1987 [22]. Cardiovascular drugs were used by 9% of the women [23], but these drugs are not often discussed in family magazines. Homeopathic drugs are more often discussed in the articles than in the question and answer section; this is in contrast with the other major ATC main groups. This might be due to the fact that physicians play a significant role as adviser or editor of this section.

The kind of information given about drugs is limited. Only a part of the publications pay attention to the side effects of a drug therapy. This is also found in the American study of Chrisler and Levy (1990) who studied information on premenstrual syndrome in magazines [24]. On the other hand, in one third of the publications the reader is advised to consult a physician. Physicians state that indeed once a new drug is discussed in the mass media they do get more questions [12]. Elie studied the effect of mass media publicity about medical subjects on consultation behavior at physicians; she found little effect on the frequency of the presenting complaints, in general. However, mass media publicity about new cures did cause a significant increase in the frequency of the presentation of the complaint relating to that therapy [25]. Health professionals confronted with patients asking questions about drugs in response to publications in family magazines should realize that the patient knows the name of a drug but is seldom informed about other aspects of the therapy, such as side effects. Negative aspects of drug use receive little attention in the family magazines.

According to a Dutch consumer organization the magazines sometimes advise the use of a brand drug. The organization suspects the influence for the pharmaceutical industry here and in fact considers this as a form of masked advertising [26]. In this study a brand name was found in a limited number of publications, proportionally homeopathic drugs were most frequently

cited by brand name. It is interesting to notice that OTC products are more frequently cited by brand name than prescription drugs. A physician attached to a family magazines expressed disapproval of the use of brand names in a family magazine [27]. Group and functional names were most often used to point to a drug. These names are more clear to the readers of the magazine than a brand or generic names.

The idea sources of the journalists working on family magazines are quite different from the sources used by newspaper journalists. Newspaper journalists focus on the scientific and medical literature to search for news items [28], while journalists working on family magazines are more interested in items that are directly useful or applicable for their readers and are therefore guided by letters from their readers and ideas from other mass media channels. Nevertheless the agendas agree. This partly determined by the important role newspapers play as source of ideas for journalists working on family magazines. The drugs most frequently discussed in the family magazines are also the groups of drugs most frequently discussed in the newspapers.

In general, physicians and other medical experts do play a major role as sources of information on drugs whereas newspaper journalists' major sources of information are the scientific and medical literature and personal contacts with researchers [28]. In contrast to journalists working for daily newspapers, journalists working at family magazines prefer to use the same experts on several occasions. The pharmacist is, however, seldom asked for advice by journalists.

Sometimes a magazine co-operates with a pharmaceutical company. A company may finance an enclosure about a disease or group of drugs. Physicians and pharmacists in the Netherlands sometimes receive mailings from pharmaceutical companies to draw their attention to publications in family magazine [29]. Physicians are in this way prepared to answer questions from patients [30] and pharmacists can buy the drug in advance so they have enough of it in stock [31].

In conclusion we can say that different kinds of drugs are discussed in the family magazines. The choice of topics is directly related to the interest of the readers, much attention is paid to gynecological drugs. The information given about drugs is limited. Side effects for example are note frequently discussed. In the provision of information physicians and medical specialists play an important role. There is, however, until now no role for the pharmacist as source of information on medicines in family magazines.

REFERENCES

1 De Jong- vd Berg LTW, Haaijer-Ruskamp FM, Van Trigt AM. Evaluatie van een voorlichtingsbrochure over geneesmiddelen en de overgang. (Evaluation of a brochure about drugs and the menopause) Pharmaceutisch Weekblad 1989;124: 870-876.

2 De Jong- vd Berg L, Waardenburg C. Geneesmiddelengebruik tijdens de zwangerschap. (Drug utilization during pregnancy) Groningen: Styx-publications, 1991: 47-51.

3 Visser TJ. Geneesmiddelvoorlichting. Een overzicht. (Patient education about medicines. A overview) (Leiden: Instituut voor Huisartsgeneeskunde en Wetenschapswinkel RU Leiden, 1989:18,40.

4 O'Keefe MT. The first human heart transplant-A study of diffusion among doctors. Journalism Quarterly 1969;46:237-242.

5 O'Keefe MT. The mass media as souces of medical information for doctors. Journalism Quarterly 1970;47:95-100.

6 Phillips DP, Kanter EJ, Bednarczyl B, Tastad PL. Importance of the lay press of medical knowledge to the scientific community. New England Journal of Medicine 1991;325(16):1180-3.

7 Oudenrijn F. van den. Tijdschriften, een medium voor wetenschap en techniek? (Family magazines, a medium for science and technology?) Scriptie Katholieke Universiteit Nijmegen/ Stichting PWT, 1991.

8 Durant JR, Evans GA, Thomas GP. The public understanding of science. Nature 1989;340:11-14.

9 Stumpel HAM. Onderzoek in de praktijk. (Research in practice) Nederlandse Mediagids 1989; 13 (mei): A531- A5340.

10 Hermes J. Sommige dingen doe ik alleen op uit vrouwenbladen en niet uit de praktijk: Over het gebruik van vrouwenbladen en empowerment. (Some things I learn by reading family magazines and not by experience: the use of family magazines and empowerment) Massacommunicatie 1989; 4: 283-304.

11 Leemhuis A. De Libelle-arts: enkele functies van een bijzonder soort "vrouwenarts". (The family magazine physician: some functions of a very special kind of physician) Amstelveen, 1980.

12 Oudkerk RH. Wat merkt de huisarts? (What does the physician notice?) Ned T Obstetrie & Gynecologe 1991;104:316-319.

13 Haspels AA. Arts en media. (Physician and media) Ned T Obstetrie & Gynecolgie 1991;104:328.

14 Wellings K. Help or Hype: An analysis of media coverage of the 1983 "Pill scare". In: DS. Leather, GB. Hastings, K. O'Reilly, JK. Davies (ed). Health education and the mass media II. Oxford: Pergamon, 1986: 109-115.

15 Jones EF, Beniger JR, Westoff CF. Pill and IUD discontinuation in the United States, 1970-1975: the influence of the media. Family Planning Perspectives 1980; 12 (6): 293-300.

16 Soumerai SB, Ross-Degnan D, Spira Kahn J. Effects of professional and media warnings between aspirin use in children and Reye's syndrome. The Milbank Quarterly 1992; 70 (1): 155-182.

17 Sturkenboom MCJM, De Jong-van den Berg LTW, Cornel MC, Stricker BHCh, Wesseling H. Communicating a drug alert - a case study in the Netherlands- Eur J Clin Pharmacol 1994;47:125-132.

18 Lunde I, Dukes G. (ed). The role and fuction of the community and hospital pharmacist in the health care systems of Europe. Groningen: Styx Publications, 1989:53.
19 Anonymous. Nordic Statistics on Medicines 1981-1983. Part II. Nordic Drug Index with Classification and Defined Daily Dose. Upsala: Nordic Cousel on Medicines, 1985.
20 Van Trigt AM, De Jong- van den Berg LTW, Willems J, Haaijer-Ruskamp FM. Does the scientific medical literature set the agenda for medicines discussed in newspapers. Pharmacy World & Science 1993, 15 (6): K14
21 Vermey GCG. Het gebruik van de anticonceptiepil stijgt nog steeds. (The use of oral contraceptives still increases) Gezondheid/CBS 1989;7:14-9
22 Van der Laan JW, Van Amsterdam JGC, Moerman CJ, Zitman FG, Wieringa NF, Haaijer-Ruskamp FM, et al. Chronisch gebruik van slaap- en kalmeringsmiddelen. (Chronic use of sedatives) Bilthoven, RIVM (rapport nr 319002001), 1992
23 Van der Berkel EJC. Gezondheidsenquetes. Gezondheid en medische consumptie naar geslacht. (Health Questionnaires. Health and medical consumption by sex) Maandber Gezondheid (CBS) 1987;6(3):5-14.
24 Chrisler JC, Levy KB. The media contruct a menstrual monster: A content analysis of PMS articles in the popular press. Women & Health 1990; 16(2): 89-104
25 Elie IHPM. Medische berichtgeving in de media en consultatiegedrag bij huisartsen. (Medical news in the mass media and physician consultations) Nijmegen, Communicatiewetenschappen Katholieke Universiteit Nijmegen, 1992.
26 Anonymous. Medische rubrieken niet altijd betrouwbaar. (Medical features not always reliable) Consumentengids 1991; (7): 436-440.
27 Klaassen EJ. Geen verkapte reclame in vrouwenbladen. (No hidden advertising in family magazines) InterinYho magazine 1991; (mei): 7
28 Van Trigt AM, De Jong-van den Berg LTW, Haaijer-Ruskamp F.M, Willems J, Tromp TFJ. Journalists and their sources of ideas and information on medicines. Soc. Sci. Med. 1994; 38 (4): 637-643.
29 Hofstee HH. Geneesmiddelreclame (ing.brief). (Drug advertising (letter)) Medisch Contact 1991;46 (12):358
30 Van Everdingen JJE, Krol JL. Verborgen verleiders (Hidden persuaders) (p191-201). In JJE van Everdingen, N.S. Klazinga (ed). De wet tot behoud van waarheid. Overveen: Uitgeverij Belevedere, 1991.
31 Bruinsma H, Dekker F. Beinvloeding van de huisarts door geneesmiddelreclame. (Influencing the physician by drug advertising). Pharm Weekbl 1991; 126: 1030-6

CHAPTER 7

MAKING NEWS ABOUT MEDICINES

DISCUSSION

7.1 INTRODUCTION

This thesis presents a series of studies analyzing the sources used by journalists when writing about medicines. The main question addressed was: Which sources are used and for what reason? The underlying concern was if the mass media can be considered a good channel in optimizing rational drug use. In this final chapter the results are discussed after making some remarks about the methods used.

7.2 SOME NOTES ON THE METHODS

In this study the approach has been qualitative because it is exploratory and qualitative methods are well suited in this type of study. In particular, if the study explores the meanings, variations, and perceptual experiences of phenomena qualitative methods are the instruments of first choice [1].

The qualitative approach (in depth interviews) was combined with a quantitative approach (content analysis). Qualitative and quantitative methods can be effectively used in the same research project [2]. We used the quantitative data obtained from the content analysis to validate the qualitative data on some topics from the interviews. This use of multiple data sources, and of multiple methods as well as the use of various records is called triangulation [3]. The combination of a quantitative and qualitative approach should be used more often in this field of research. As shown in this thesis, the differing research approaches provide us with complementary information. It has been very useful in the understanding of the process of making news about medicines. In chapter 4, for example, the interviews provided information on the selection of experts in general; the content analysis showed that journalists differentiate between researchers and functional experts on one hand, and spokespeople from pharmaceutical companies, patients' interests groups and patients on the other hand.

The methods most commonly used to study the sources used by science journalists are direct questioning the journalists themselves in interviews or by using mail questionnaires or a combination of both methods. Examples of these approaches can be found in the study of Stappers et al. in the Netherlands [4] and the study of Winnubst in Belgium [5], looking into the sources used by science journalists. They used structured questionnaires and questions with "fixed" answers, i.e. quantitative approaches, directed at answering questions like, for example, how many journalists use

the scientific literature as a source of information. Disadvantages of using a quantitative approach in studying the sources used by journalists are that one needs to know beforehand what sources can be used and that the kind of questioning can influence the answers of the respondents and as such introducing a form of bias [6].

In depth interviews

In qualitative research the number of respondents is small compared to the sample size in quantitative research. Sample size is not the determinant of research significance in a qualitative study. The aim is to illuminate the research question, and the major concern is with information richness [7]. The respondents interviewed in this thesis were, in case of newspapers and family magazines, the journalists responsible for news about medicines, except for news about drug policy. To illuminate the role of the pharmaceutical industry, the persons responsible for the contacts with the press were interviewed. The studies described in this thesis show that interviews with a small number of respondents provide us with in depth information on several topics relevant in the process of making news about medicines.

The issue of generalizability is raised frequently in critics of qualitative research [7]. In case of our study this problem is less relevant since the journalists interviewed have a great coverage. The circulation of the daily newspapers, which the journalists included in this study work for, accounts for approximately 42% of all Dutch newspapers [8]. These newspapers sell about 2 million copies, so the journalists are responsible for articles on medicines which can be read by a large part of the Dutch population. The same is true for the magazines. The total circulation of the three women's magazines of which the journalists were interviewed in this study is 1.430.000 copies weekly. The magazine with the largest circulation prints over 740.000 copies every week and reaches 32% of the Dutch population and 50% of the women in the Netherlands over 13 years old [9]. Both the newspaper journalists and the family magazine journalists may play a major role in informing a general public about medicines.

A disadvantage of using (in depth) interviews is the possibility of social desirable answers, i.e. answers biased by the respondent's attempt to give answers that are socially desirable or preferred. To deal with this problem we guaranteed, of course, the anonymity of all our respondents both the journalists and the public relations officers from the pharmaceutical companies. Secondly, in the interviews with the journalists, check or control questions were used;

some questions were asked twice in a different way at another moments of the interview.

All the interviews were tape-recorded and fully transcribed. The tape-recording of the interviews was necessary because many open-ended questions were asked; writing the answers down can cause uncomfortable delay in the interview. Because we used semi-structured in depth interviews the transcripts were very useful for combining relevant information on the different research questions coming up - sometimes even unasked - in different parts of the interviews. A technical problem of method used is that it is very time-consuming.

Content analysis

Content analysis is a research technique for the objective, systematic, and quantitative description of the manifest content of communication [10]. We used this technique in our studies on the sources (chapter 2 and 6), the study on the agenda-setting function of the scientific and medical literature (chapter 3) and the study on the role of experts (chapter 4). The main problem of content analysis is objectivity of the coders. Since communication always includes the encoding of a message by the sender - in this case, for example, the journalist - and the decoding by the receiver - this case the coder - subjective interpretation cannot be avoided [10]. To deal with possible inconsistency of classification all the analyses were done twice, at least once by the author of this thesis.

The combination of in depth interviews and content analysis

In general, the results of the interviews with respect to the sources seem to be confirmed by the results of the content analysis. However, a few remarks have to be made about this comparison. The comparison at the level of the information sources is not completely exact because, as indicated by the journalists, not all the information sources are always mentioned in the articles. Understandably, only the most important sources and the most influential ones are mentioned. The source may make a story newsworthy; it is possible that sources like the *New England Journal of Medicine* are overrepresented in the content analysis. Whenever this journal is used it is mentioned in an article; this is less prone to occur with a Dutch journal, which may be considered to be less authoritative.

The difference found regarding the role of the pharmaceutical industry as a source of information (see chapter 2), between the results of the content analysis and the interviews may have been due to the way the pharmaceutical industry was coded in the con-

tent analysis. On the other hand this difference may have been caused by socially desirable answers in the interviews.

Better insight in the role of the pharmaceutical industry as a source of ideas and information for newspaper journalists needs further research. To overcome the difficulties of an interview with its inherent possibility of bias, one could envisage a study in which all the material available to journalists from universities, pharmaceutical companies and other sources is analyzed and compared to newspaper articles that appear during that period. Another possibility is a study in which medical journalists are observed during their work. Such work has been undertaken in another field of journalism by Gans [11], but it is clearly labour-intensive and time-consuming. In chapter 5 we used another approach to gain insight in the role of the pharmaceutical industry as a source of ideas and information, we interviewed public relation officers from pharmaceutical companies about the way they make use of mass media channels and the manner in which they approach mass media journalists. The results of these interviews showed that a company does not approach journalists often, but there are many companies approaching mass media journalists with information about their products or their company. The content analysis shows that pharmaceutical companies are often mentioned as sources of information (see chapter 2).

7.2 SOURCES FOR NEWSPAPER JOURNALISTS

DIFFERENT ROLES

Most studies on the sources of science journalists have concentrated on which information sources are being used. In the agenda-setting theory another function of sources is described. A source may not be successful in telling the audience what to think about a certain topic but may be successful in telling the the audience what topics to think about [12]; in other words to be a source of ideas. Our hypothesis is that journalists can use the sources in two ways, as a source of ideas or as a source of information. A source of ideas is a source which plays an important role in the selection of a topic to write about. A source of information is used by a journalist to write his story, to obtain (extra) information on the already selected topic. The way in which a source is used, as a source of ideas or information, influences the content of media reporting in a different way. Because we are interested in the factors influencing the content of media reporting on medicines we differentiated between these two kinds of sources.

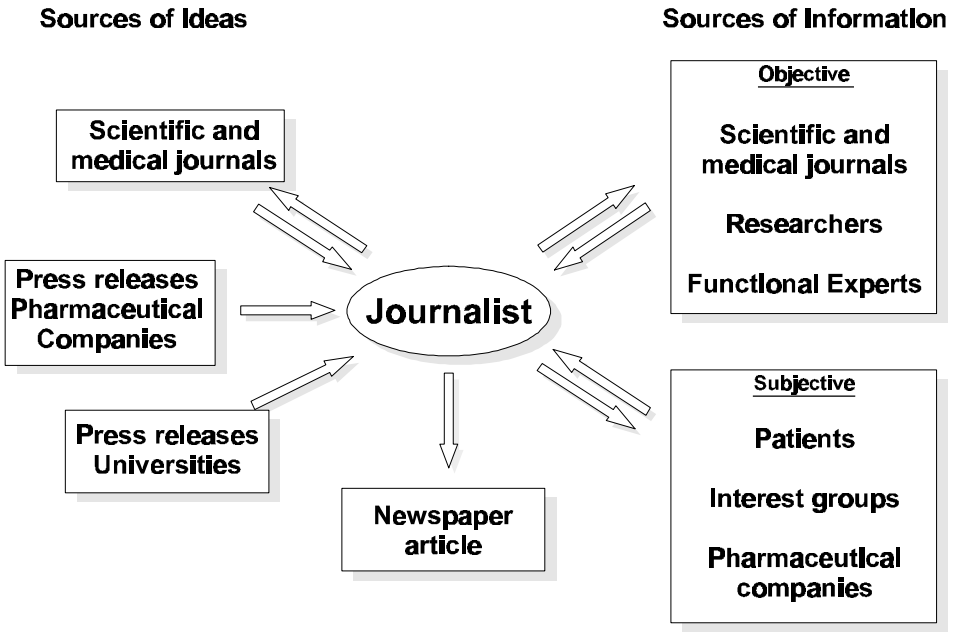

Figure 1
Sources of ideas and of information used by newspaper journalists.

Our hypothesis that sources can fulfil different functions was confirmed in our study. Some sources are more important as sources of ideas while others are more important as sources of information. The results of our study are summarized in figure 1.

Agenda-setting

Our findings that the drugs most often discussed in the scientific and medical literature also appear in the mass media suggests the agenda-setting role of these journals (chapter 3). Vice versa, the scientific and medical community may also use the daily newspapers as an initial source. As shown by Philips et al., scientific articles from the *New England Journal of Medicine* which had been covered by the *New York Times* were more often cited in other scientific articles than articles not covered by the *Times*[13]. We assume that the article in the *New York Times* did not contain enough information for scientists but alerted them to the original article in the *New England Journal of Medicine*. Also in this example we can distinguish between the source of idea, in this case the *New York Times*, and the source of information, the *New England Journal of Medicine*, as used by the scientist.

However, the agenda-setting function of the scientific and medical literature seems to apply less to "bad news", articles focusing on side effects of drugs. Whereas the "good news" agenda of the scientific and medical literature is comparable to the "good news" agenda of the newspapers, the "bad news" agendas, on the other hand, are quite different. It seems that in the case of "bad news" other sources of ideas are more important. Different sources

might supply journalists with information on unexpected side effects of medication or other information important to the users of a particular drug, like for example in the case of acitretin. 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 and the mass media did pay attention to the acitretin problem [14]. In case of triazolam, a Dutch psychiatrist informed the mass media about his observation of serious side-effects [15,16]. Different sources can thus fulfil the agenda-setting role with respect to "bad news".

The relationship between journalists and the scientific and medical community

Information from the scientific and medical community comes through different channels to mass media journalists. These different channels appear to fulfil different functions. Press releases from universities are only important as a source of ideas. Press releases draw the attention of a journalist to a topic but seldom contain enough information to be used as sources of information. Experts are used as sources of information. The scientific and medical literature is important both as a source of ideas and information. Journalists subscribe to certain scientific journals, they chose themselves, to look for "safe" subjects to write about and for valid information. The information in these journals is usually peer-reviewed, and gives the journalists, therefore, some guarantee about the correctness and reliability of the information given. According to Entwistle, British medical journalists rely on medical journals for the same reason [17]. The journalists seem to use the same standards and codes as those used in the scientific community to judge the significance of research. This might be explained by the fact that they are dependent on experts from the scientific community for information. If one makes mistakes this might have consequences for one’s relationship with informants or experts. And secondly, all journalists are aware of the fact that news about medicines might create false hopes. They all claim to be very careful when writing about medicine(s). One way to be very careful is to only use information that is considered to be valuable within the scientific community and, therefore, published in "quality" journals.

The "Buck affair"

As already discussed, journalists seem to differentiate between two kinds of information sources. This differentiation is also shown in chapter 4 in which we studied the role of different experts as

sources of information. Objective sources are, for example, researchers and medical and scientific journals, whereas the pharmaceutical industry and patients can be considered as subjective sources. An objective source can be the sole source used to write an article on medicines, whereas subjective sources are seldom the only source used. The newspaper journalists recognize the risk of obtaining one-sided information or even incorrect information using one source, objective or subjective, and have learned their lesson from the affair with professor Buck. This affair shows what can go wrong.

In April 1990 professor Buck and his colleagues announced at a press conference a major breakthrough in the AIDS research. The mass media paid much attention to these remarkable findings. The day after this press conference the results were published in Science and therefore journalists thought the findings were reliable. However, later that month, there were doubts about the stability and purity of the substance used in the experiments. A year later, a research committee observed shortcomings and mistakes in the planning of the research, the interpretation of the results and their presentation in the Science article.

All sorts of people, including scientific researchers, do want to get their messages out through the newspapers for all sorts of reasons, and they may not be as careful as they should be [18]. Partly in response to the Buck affair Dutch biomedical researchers developed a concept code of conduct with respect to press contacts. In this code it is stated that researchers should be very careful in giving information to mass media journalists to prevent that their statements create false hope or unnecessary fear. Before notifying the press about developments they should discuss the results of their research with their peers [19].

Both journalists and researchers should be very careful with information about research findings which could possibly lead to new cures for life threatening diseases or untreatable diseases. Journalists should use their common sense to evaluate research findings, even if these findings are peer reviewed and published in scientific journals, and ask experts for advice. Researchers should evaluate their own research findings and those of other researchers very critically. Despite the fact that both researchers and journalists agree to be as careful as they can, the Buck affair can happen again.

Controversies: Prozac®

In chapter 4 we showed that different experts cited in the same article most of the time gave the same or complementary information. This is in contrast with, for example, political reporting, where experts are used to express different views in the same article. In the field of medicine, the media seem to exclude dissident experts and voices [20]. However, in some cases different views are expressed. In recent years, the mass media in the Netherlands did pay much attention to the different views about fluoxetine (Prozac®). Some of the reports regard this drug as a breakthrough in psychiatric treatment while others do not think fluoxetine to be different from the other drugs used in psychiatry. Furthermore, there is a debate going on amongst the advocates and opponents of the biological psychiatry or psychopharmacology. The advocates argue that psychiatric disorders are caused by too much or too little neurotransmitters and can be treated by drugs influencing neurotransmitters. The opponents, on the other hand, challenge this theory and propose other therapeutic measures, like, for example, counselling therapy.

During our study-period attention was paid to different views. A small number of articles was dedicated to fluoxetine; according to the Scientology Church fluoxetine caused suicide and this drug should not be used, while on the other hand psychiatrists claimed that not fluoxetine but the depression fluoxetine was used for, was the cause of the suicide. In the mean time, Jick et al. have showed that the risk of suicide is not determined by the antidepressant used. They state that, though the suggestion has been made that fluoxetine may trigger an emotional state which in itself increase the risk of suicide, this suggestion can not be supported by formal evidence [21].

"Objective" versus "Subjective" sources

Physicians and medical researchers (objective sources) are treated differently by the media than other sources of information. Karpf states that when doctors and medical researchers take part in radio or TV programmes they are accorded privileges which would turn politicians green with envy. When an interview is recorded, science features producers and presenters are generally keen to ensure that a scientist or doctor has expressed himself in the best possible way, and both sides are satisfied with the result. Though broadcasting organisations formally retain editorial control, doctors and scientists are often allowed to view programmes before transmission and suggest editorial changes on the grounds of

medical inaccuracy [20]. The situation in Britain as described by Karpf cannot be confirmed in the Netherlands. Most of the newspaper journalists in our study do not have such a strict policy regarding the "control" of the scientist or physician interviewed prior to publication. When the expert interviewed wants to check the article this will be arranged, and whenever the journalist is not sure that he has got the information right, then this would be another reason to ask the expert to check it. During the correction process only facts can be changed. These results are confirmed by Willems et al. who also interviewed science journalists in the Netherlands [22].

The "subjective" sources are treated differently by the journalists. Spokespeople of pharmaceutical companies are usually not asked to check the information they have given to the journalists.

Patients are seldom used as sources of information by science journalists writing about medicines in Dutch newspapers. It seems that these journalists consider the expertise of one patient an insufficient basis for an article. In society, however, the expertise of patients is recognized to be important. Patients and interest groups do play a role as experts in the development and implementation of health policy. In our study period, patients were cited in newspaper articles with respect to sumatriptan, which was introduced during that period as a new drug for the treatment of migraine. Migraine patients are, just like many other patient groups, well organized in an interest group. It is, for a journalist, relatively easy to trace these patients while in the case of other diseases it might be more difficult to find a patient who is willing to talk about his experience. More important is the fact that these journalists do not consider patients to be experts. It is our impression that patients and interest groups are more often used as sources of information with regard to drug policy. In relation to the Dutch drug reimbursement system, introduced in the beginning of the 1990s, interest groups were able to express their opinion in newspaper articles.

7.3 FAMILY MAGAZINES

The sources of ideas and information used by journalists writing in family magazines are quite different as compared to those used by newspaper journalists. Letters from readers and mass media channels are the most important sources of ideas. This agenda-setting role of the newspapers is confirmed in our comparison of the drugs most often discussed in the newspapers and those most

often discussed in family magazines. This agenda-setting through other mass media channels can take place in a direct and indirect way. Direct, because the editors use other mass media as sources of ideas. Indirect because some people write letters to the magazine in response to mass media publicity. These letters from readers on medical topics are important for the editors of family magazines. They provide information about the topics that are worthwhile discussing because readers have to deal with these topics and are interested in them. Family magazines have to please their readers; approximately 60% of the revenue comes from subscriptions and the sale of single issues [23].

Experts, in particular general practitioners and medical specialists, and patients are the most important sources of information (see figure 2). In contrast to our findings in newspapers, family magazines prefer to use the same expert on several occasions. The information needed from an expert is information of practical value, not on the level of scientific research. Journalists working on family magazines seem to prefer generalists and professionals "directly" caring for patients. Therefore, it is possible for these journalists to use the same experts at different moments. It is sometimes difficult to find another expert because not all experts are suitable as sources of information. Often the magazines employ physicians to answer the questions received from the readers of the magazine. The pharmacist is seldom asked for advice, despite his expertise and the fact that he is also more or less a generalist in the field of medicines.

Another contrast to newspapers, is that patients are important sources of information in family magazines. Readers of family magazines learn from articles and the question and answer section

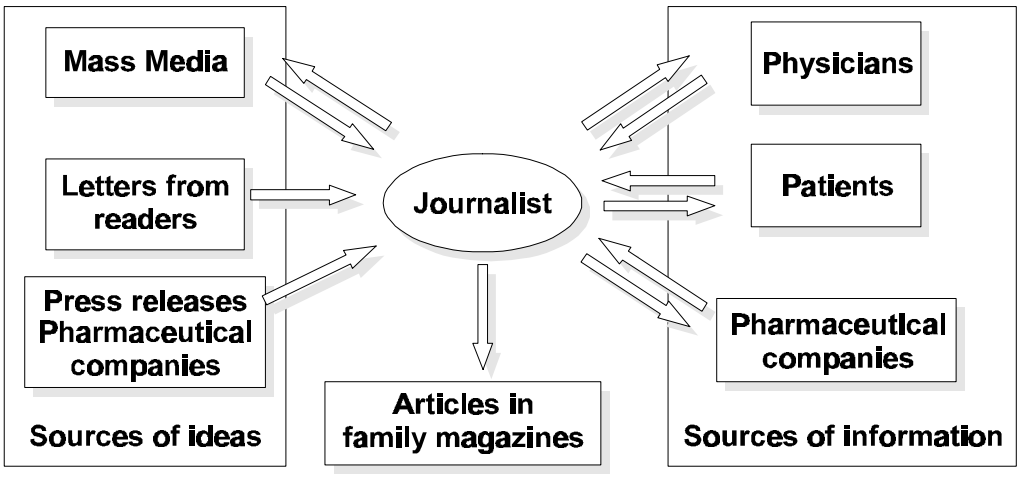

Figure 2
Sources of ideas and information used by 'family magazine' journalists

how others solve and deal with problems in the field of illness. Furthermore readers are especially interested in human interest stories and the question and answer section [24]. This being the case it seems rational to use patients as sources of information.

Family magazines and pharmaceutical companies

Sometimes a magazine co-operates with a pharmaceutical company. A company may finance an enclosure about a disease or group of drugs. Both the journalists and the spokespeople of pharmaceutical companies mentioned this kind of co-operation. In this case the magazine is financially dependent on the support of the industry. Another form of dependence can arise if pharmaceutical companies advertise in these magazines.

Kessler showed that women's magazines in the United States did not cover smoking-related health concerns because they might risk losing advertising revenue by publishing articles on this subject. Still, women' health was a major concern of all the magazines [25]. The risk of losing advertisers can become a conflict of interest between the editors and financial managers of a magazine. In 1981 the Dutch family magazine Nieuwe Revu published a ten page article on smoking and its hazards. The tobacco industry reacted with an advertising stop [26]. Such a conflict of interest sometimes influence the independency of the editorial board. Advertisements are important to women's magazines; about 40% of the revenue originates from advertisers [23]. The pharmaceutical industry is important in terms of OTC (over-the-counter) advertisements. This can make the magazine dependent. Because the journalists also use pharmaceutical companies as a source of information, this may seriously bias the information provided.

Newspapers versus family magazines

The differences in sources used by newspaper journalists and family magazine journalists can be explained by their differences in function. Whereas newspapers focus on news, family magazines are more interested in information that is directly useful or applicable for their readers and not new information or news per se. Family magazines are guided by letters from their readers and by other mass media channels for the selection of topics that might be of interest for their readers, whereas newspapers journalists writing about medicines, are guided by the scientific and medical community to get information on recent developments in the pharmaceutical field. This may in part be explained by the type of newspaper journalist we interviewed, medical or science journalists. In our newspaper study, information on drug policy and the

Dutch drug reimbursement system was excluded. The journalists working on family magazines stated that drug policy and the reimbursement system were topics they never wrote about.

These differences in function are also reflected in the sources of information used. Newspapers seem to prefer scientific experts whereas family magazines seem to prefer generalists and health care professionals. Neither newspapers nor family magazines consider the pharmacist important as a source of ideas or information. The recommendation of the World Health Organization in 1989 that the pharmacist should play a central role in the provision of advice and information to the general public on the use of medicines has, therefore, not yet been implemented [27]

7.4 THE PHARMACEUTICAL INDUSTRY AND THE LAY PRESS

Information from the pharmaceutical industry to the general public has become more extensive and emphatic. Pharmaceutical companies consider informing a lay audience about their products and diseases to be important. In our study two reasons were given to explain this increasing interest of pharmaceutical companies in a lay audience: 1. the emancipation of patients; and 2. the weak image of the pharmaceutical industry which has to be dealt with. Because EC directives forbid the advertising of prescription drugs to the general public [28] one sees that pharmaceutical companies try to gain interest from the mass media journalists to pass on messages to a mass audience [29-33]. In our study the representatives from pharmaceutical companies stated that the lay press, both daily newspapers and family magazines, play an important role in informing a lay audience about diseases and (new) products obviously because of the great impact.

As long as independent and critical journalists and editors decide themselves if information about drugs coming from pharmaceutical companies is newsworthy enough to be published it is news and no "hidden advertising". Journalists should make it very clear to the reader which sources have been used to write the article, so that the receiver himself can decide whether or not the information is reliable. Journalists are aware of the fact that news about (new) drugs might create false hopes and patients have no choice whether or not to "buy" or use a particular drug. Some journalists feel responsible for the consequences or effects of their publications [22]; this does not stop them to write about developments in AIDS research or potential new drugs. As stated above, editors of magazines can become dependent on the pharmaceuti-

cal industry because of the revenues of OTC advertisements and financial support from companies to publish enclosures on certain drugs or diseases. This may seriously bias the information provided.

Sturkenboom et al. showed that the mass media do play an important role in warning the users of a prescription drug quickly, and that not all the users can be traced and will be informed through health professionals in the Netherlands [14]. In such a case it is important that pharmaceutical companies and journalists co-operate in the best and most effective way they can. Mass media play an important role in warning users of a drug quickly whenever a major health threat is associated with that particular drug.

7.5 MASS MEDIA REPORTING AND THE PROFESSIONAL VIEW

Our study shows the scientific and medical community to be major sources of information on medicines used by newspaper journalists. These sources obviously have their reasons on some occasions to inform the press about recent developments. Sometimes researchers try to attract mass media publicity - before publication in scientific or medical journals- because publicity might influence research funding. Another reason to supply journalists with information about "unpublished" results is that rapid dissemination of information about promising new therapies is crucial for patients with severe illnesses that have no effective treatment [34,35]. Steinbrook argues that only for a tiny minority of studies, this urgency justifies unconventional communications [34]. The public discussion of results after formal publication has the advantage of peer review but introduces a delay of many months [35]. We prefer media publicity after formal publication and agree with Steinbrook, who states that editors of scientific journals should accelerate reviews of studies of far-reaching clinical significance [34]. Formal publications before mass media publicity gives health professionals the opportunity to judge the results of a study themselves. Mass media reports do not provide health professionals with enough information to make a balanced decision about, for example, a new drug. Mass media publicity can accelerate the diffusion of information by pointing out to important scientific papers. In case new information about unexpected severe side effects of drugs becomes available or a life threatening production error is made, mass media publicity should be encouraged to warn potential users of the drugs. As shown by Sturken-

boom et al. not all users of a drug can be warned by health professionals [14].

We did find the scientific and medical literature (formal publications) to be the most important source of both ideas and information. The medical journalists in our study indicated to prefer indirect contact with the professional community provided through journals, partly because of the peer review system the journals use, which gives the journalists some guarantee of reliable results and conclusions. Moreover, these journalists are well aware of the fact that information about medicines might create false hopes so if they feel uncertain information is checked by seeking advice from relevant experts. However, as stated before, the system of peer review is not completely waterproof. Journalists must be able to assume that a peer reviewed published paper is reliable and based on sound scientific experiments.

Good news, bad news?

The criticism that bad news is more newsworthy than good news, cannot be confirmed in our study. On the contrary good news about medicines received more attention in newspapers than bad news. In the scientific and medical community, studies showing any (adverse) effects are more often submitted and accepted for publication than studies showing no (adverse) effects; this is called publication bias. As already shown by Koren et al. this publication trend seems to be reinforced by the way newspaper journalists select their topics. Journalists prefer to write articles about studies showing (adverse) effects [36]. This thesis shows that on top of that, newspaper journalists introduce an extra form of bias by focussing on good news.

Another concern of the scientific community - i.e that the media does not portray current developments and concerns within the scientific community - seems not to apply completely for news about medicines. In fact, our study dealing with agenda setting suggests that the newspapers pay attention to the same topics - therapeutic groups of medicines - as the professional literature. If therefore some diseases or pharmaceuticals receive more attention than others in mass media reporting this can be partly explained by the preoccupation of the professional journals. However, the mass media do pay more attention to "good" news than to "bad" news on medicines. With respect to this point, it seems true that the way in which the mass media portray therapeutic developments is too optimistically; the publication bias as found in the scientific journals is reinforced. Journalists writing about scientific developments are dependent on their sources. Both researchers

and pharmaceutical companies are eager to promote their stories of success. Nelkin argues that the press coverage of new technological developments probably encourages the public desire for easy solutions to economic, social and medical problems. Just as high technology is presented as the solution to international competition, so medical technologies are portrayed as solutions to problems of health. Nelkin states that the press focused extensively on the search for a AIDS vaccine well before this technological solution was in sight, helping to divert public attention from the more immediate need to prevent the transmission of the disease [37]. Both scientists and journalists should be aware of this kind of effect of mass media publicity and should portray scientific research in a more realistic way. Journalists and scientists should pay more attention to the process of scientific research, and to its "failures" and pitfalls.

Health education through the mass media?

Some of the forms of criticism are also related to differences in opinions about the role the mass media should serve. Especially health educators think that mass media journalists should have a responsibility and a role in patient education and counselling. Therefore, they are very concerned with the lack of practical information and the fact that some diseases are underreported in the mass media. Winnubst showed that science journalists do think they have a task informing a general public about developments in science and to provide their audience with practical information about these developments. Science journalists, however, are autonomous in the selection of topics. They are guided by latest trends in science, not by the needs of health educators. Family magazines, on the other hand, do provide their readers with practical information on several topics; health educators could try to co-operate with family magazines. This kind of co-operation has, in our opinion, several advantages. Family magazines do play a major role as an information source for the general public on health topics. Furthermore, they do know how to deal with a topic. Health educators could provide journalists with important information on a topic that needs attention.

Both our studies concerned with information about medicines in family magazines (chapter 6) and medicines in relation to pregnancy (annex 1) show that the reader's do get practical information about medicines. The question and answers sections of these magazines are specially designed to "educate" the readers. However, we agree with the criticism of Freimuth about risk information [38]. Although the public wants to know about side effects of

medicines [39,40], this information is given in less than half of all the publications in family magazines. If family magazines wish to assume a degree of responsibility in patient education they should pay attention to the side effects of drugs in all articles. Magazines could play a major role in health education, since the editors do know their audience very well. They know the needs, perceptions and language of their readers and are, therefore, in a position to pass on health messages in an effective way to a large audience. Their audience is, in fact, very interested in health related information. The pharmaceutical industry is well aware of the potential of this communication channel and is already using it. Health educators could try to cooperate with these magazines in a similar way, instead of wasting money to produce yet further brochures.

7.6 CAN THE MASS MEDIA BE CONSIDERED A GOOD CHANNEL IN OPTIMIZING RATIONAL DRUG USE?

Increasingly, the general public wants to be promptly informed of new medical and scientific findings. Elie showed in a pilot study that news about new cures results in a small increase in physician consultations [41]. This puts pressure more than ever on all of us engaged in biomedical research to be clear, accurate, and honest and not to overstate our findings [42]. Several articles have been written about the way to interact with the media with special focus on physicians and other health professionals [43-45]. Special meetings have been organized to stimulate a discussion between healthcare professionals and mass media journalists [13,46] and to make a fruitful cooperation with respect to medical news possible.

Both the scientific and medical community on one hand, and the mass media journalist on the other, are responsible for what is published in the lay press about medicines. Sources, like the scientific and medical community, influence the news by decisions about what they tell and what they do not tell and their timing of bringing news. Recently, some researchers in the Netherlands wrote a fake book about the latest developments in medicine. All the articles in this book were invented by the authors [47]. They wanted to "check" whether or not the medical community and journalists were able to discover that all of it was nonsense. In fact at least one journalist called the editor of the book to check some of the information. However, this editor did not disillusion him. This shows that it is the duty of the journalist to check information on medicines with a relevant expert, since we all know that information in the lay press about (promising) new cures can create

false hopes. Journalists should in all cases consult relevant experts. On the other hand, if a relevant expert is asked for advice by a journalist it is his duty to cooperate in the best way he can to prevent mistakes being made. If an expert is asked for advice on something he is not an expert on, he should make that clear to a journalist. Both scientists and journalists should not portray scientific research on drugs in a too optimistical way; the picture that drugs will solve all the health problems is not a very realistic picture. This picture could be, or is perhaps already, created by focusing mainly on positive effects of medicines.

In the last three decades people have become more involved in their health and illness. The access to relevant and new information about disease, their causes and treatment is of major importance in this emancipation process. Newspapers and family magazines do play a role in the provision of information about drugs to a general public. The provision of information about the latest trends with respect to drugs is important in the general education of the public. Secondly, because this kind of information might be directly applicable in one's own situation - it might influence a decision whether or not to use a particular drug, or to visit a physician. Thirdly, because it allows people to make up their own minds about political discussions in this field. On the other hand, information about medicine in the public media causing disease awareness and interest in certain issues is one of the factors influencing the "medicalization" process. This is especially relevant, since journalists use the professional medical literature as a source of ideas and information, and the two processes might enhance each other. Both health professionals and the general public might get the same sort of information at the same time.

In this thesis information about drugs in newspapers and family magazines was studied. Further research is necessary to study the role of journalists working in television, free local papers, and gossip papers, and the kind of information about drugs provided to a general public through these channels. The impact of information in the mass media on drug utilization merits attention as well. The development and validation of research methods in this field also needs attention. In general, the combination of a quantitative and qualitative approach could be used more often in this field of research. As shown in this thesis, the different research approaches, provide us with complementary information and have been very useful in understanding the process of making news about medicines.

- The communication power of both newspapers and family magazines is potentially enormous. The pharmaceutical industry is well aware of this fact. Both newspapers and magazine editors know their readers, and can be, therefore, more often asked to be helpful in designing and implementing health education campaigns. In articles about (new) medicines attention should be paid to side effects. Furthermore, these channels play an important role informing people about newly discovered serious side effects of drugs.

- Information provided by mass media journalists is partially in accordance with the professional literature. The scientific community and health professionals are the most important sources of ideas and information. Nevertheless, the information about medicines in newspapers and magazines is biased. Both newspapers and magazines do pay more attention to "good news" than "bad news" on medicines.

- Scientists and health professionals as well as journalists should not portray news on medicines in a too optimistical way. The picture that drugs will solve all the health problems could be, or is perhaps already, created by focussing mainly on positive effects of medicines.

REFERENCES

1 Miller WL, Crabtree BF. Primary Care Research: A multimethod typology and qualitative road map (p3-28). In: Doing qualitative research. WL Miller, BF Crabtree (ed). Newbury Park: Sage Publications, 1992.
2 Strauss A, Corbin J. Basics of qualitative research. Newbury Park: Sage Publications, 1990.
3 Gilchrist VJ. Key informants interviews (p70-89). In: Doing qualitative research. WL Miller, BF Crabtree (ed). Newbury Park: Sage Publications, 1992.
4 Stappers JG, Reijnders AD, Moller WAJ, Hesp LAThM. Wetenschap als gemeengoed: een studie van de wetenschapsvoorlichting in Nederland. Staatsuitgeverij, 's Gravenhage, 1983.
5 Winnubst M. Wetenschapspopularisering in Vlaanderen. Katholieke Universiteit Leuven. Faculteit der Sociale Wetenschappen. Departement Communicatiewetenschap, 1990.
6 Emans B. Interviewen. Theorie, techniek en training. Groningen, Wolters-Noordhoff, 1986
7 Zyzanski SJ, McWhinney IR, Blake R, Crabtree BF, Miller WL. Qualitative research: Perspectives on the future (p 231-248). In: Doing qualitative research. WL Miller, BF Crabtree (ed). Newbury Park: Sage Publications, 1992.
8 Timmer G, Hoekstra JF. Dagbladoplage haalt nieuw record. De Journalist 1990; 41 (23): 32-36.
9 Stumpel HAM. Onderzoek in de praktijk. De Nederlandse Mediagids 1989;(13): A5.3.1- A5.3.40
10 Stempel III GH. Content analysis (p 119-131). In: Research Methods in mass communication. GH Stempel III, BH Westley (ed.). New York: Printice Hall, 1981.
11 Gans H. Deciding what's news. Random House, New York, 1979.
12 McCombs ME, Shaw DL. The agenda-setting function of the mass media. Public Opinion Quarterly 1973; 36: 179-187.
13 Philips DF. Physicians, journalists, ethicists explore their adversarial, interdependent relationships. JAMA 1988; 260 (6): 751- 757.
14 Sturkenboom MCJM, De Jong-van den Berg LTW, Cornel MC, Stricker BHCh, Wesseling H. Communicating a drug alert - a case study in the Netherlands-Eur J Clin Pharmacol 1994;47: 125-132.
15 Kroef C van der. Halcion, een onschildig slaapmiddel? Ned. T. Geneesk. 1979; 123 (27): 1160 - 1161.
16 Schneider PJ, Perry PJ. Triazolam - An "abused drug" by the lay press. DICP, The annals of pharmacotherapy 1990: 24: 389-92.
17 Entwistle V. Reporting research in medical journals and newspapers. BMJ 1995; 310: 920-3.
18 Smith R. Hype from journalists and scientists. BMJ 1992; 304: 730.
19 Birfelder EJ. Wetenschap en publiciteit; over terughoudendheid ten opzichte van de media. Nederlands Tijdschrift voor Obstetrie en Gynaecologie 1991;104: 315- 316.
20 Karpf A. Doctoring the media. London: Routledge, 1988.
21 Jick SS, Dean AD, Jick H. Antidepressants and suicide. BMJ 1995;310: 215-218.
22 Willems J. Bruin J de, Lrsen M. Inventarisatie van opvattingen over normative aspecten van het populariseren van wetenschap. Amsterdam, Vrije Universiteit Faculteit Biologie, 1994.

23 Gier J. de. De tijdschriftenuitgevery als onderneming. Nederlandse Mediagids 1988; (10): C2.2.1- C2.2.68.
24 Hermes J. Sommige dingen doe ik alleen op uit vrouwenbladen en niet uit de praktijk. Massacommunicatie 1989; 17: 283 - 304.
25 Kessler L. Women's magazines' coverage of smoking related health hazards. Journalism Quarterly 1989; 66: 316-133, 445.
26 Schoenmaker H. Tijdschriften maken. Groningen: Wolters Nordhoff, 1988.
27 Lunde I. Dukes G. The role and the function of the community and hospital pharmacists in the health care system of Europe. Groningen, Styx, 1989.
28 Richtlijn 92/28/ EEG van de Raad van 31 maart 1992 betreffende reclame voor geneesmiddelen voor menselijk gebruik. Publicatieblad van de Europese Gemeenschappen Nr L 113, p13-18.
29 Lexchin J. Pharmaceutical promotion in Canada: Convince them or confuse them. Int. J. Health Services 1987;17(1):77-89.
30 Morris LA, Brinberg D, Klimberg R, Millstein L, Rivera C. Consumer attitudes about drug advertisements for medicinal drugs. Soc Sci Med 1986;22(6):629-638.
31 Moser M, Blaufox MD, Freis E, et al (1991). Who really determines your patients' prescriptions? JAMA 1991;265 (4):498-500.
32 Nelkin D. How to doctor the media. New Scientist 1986, 20 november p 51-56.
33 Meijer - van Putten J.B. Maybe you're sick (Berichten uit het buitenland). Ned. T. Geneeskunde 1994;138 (20): 1042-1043.
34 Steinbrook R, Lo B. Informing physicians about promising new treatments for severe illnesses. JAMA 1990; 263 (15): 2078 - 2082.
35 Griffith PD. Publicity and unpublished results [letter]. Lancet 1992;339: 557.
36 Koren G, Klein N. Bias against negative studies in newspaper reports of medical research. JAMA 1991; 266 (13): 1824 - 1826.
37 Nelkin D. Selling science: how the press covers science and thechnology. New York, WH Freeman & Company, 1987.
38 Freimuth VS, Greenberg RH, DeWitt J, Romano RM. Covering cancer: Newspapers and the public. J Communication 1984; 34: 62-73.
39 Joubert P. & L. Lasagna, Patient package inserts. I. Nature, notions, and needs. Clin Pharm Ther 18 (1975) 507-513
40 Ridout S., W.E. Waters & C.F. George, Knowledge of and attitudes to medicines in the Southampton community. Br J clin Pharmac. 1986; 21 : 701-712
41 Elie IHPM. Medische berichtgeving in de media en consultatiegedrag bij huisartsen. Nijmegen, Universiteit van Nijmegen, afstudeerscriptie, 1992.
42 Hecht F, Hecht B. The New York Times:"All the news that's fit to print" about medicine and science. Cancer Genet Cytogenetic 1992; 62: 92-3.
43 Hoffman B. Do's and don'ts of dealing with the media. CMA 1982; 126: 408 - 411.
44 Cameron SM. Medicine and the microphone: Using the media to teach our patients. Can Med Assoc J 1991; 144 (4): 476-477.
45 Robinson-Haynes E. Physicians and journalists [letter]. JAMA 1989; 261 (9):1280.
46 Galjaard H. Publieksmedia en gezondheids zorg. Ned Tijdschr Geneesk 1992; 135 (27): 1309-1313.
47 Everdingen JJE van, Dasselaar NT van, Marck KW (ed). Nieuw Tijdschrift voor Geneeskunst. Overveen: Belvedere 1994.

SUMMARY

People are very interested in information about health and illness. Studies show that they are more interested in new medical discoveries than in sport in the news. Mass media channels (e.g. newspapers, television) do pay attention to information about health and illness. Both patients, health professionals and researchers use the mass media as source of information on medicine.

There has been much debate over the possible effects of the mass media during the last decades. Several examples of news about medicines showing effect have been described. For example, negative publicity in the mass media resulted in the change in women's "pill"-taking behaviour - a decline in the use of the oral contraceptives in the 1970s. The lay media was also an important communication channel in informing both patients and health professionals that the post-therapy contraception period after acitritin (Neotigason®) therapy was extended from two months to two years. According to a Dutch gynaecologist, family magazines were very helpful in introducing the sub-50 oral contraceptives in the Netherlands by giving attention to these new oral contraceptives. The women were advised to ask their physician for a 'low-dose pill'. Mass media reporting can also have effects on drug policy decisions. 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 psychiatrist.

As shown above mass media reporting can have important effects. 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 criticising al-

most continue the content of mass media messages about medicine and content determines the effect.

Critics argue that some diseases receive proportionally more media coverage than others, although they may be rare and have a low(er) incidence. Sometimes reports in the mass media raise false hopes. Mass media reporting about medicine(s) has contributed to medicalization since no critical analyses of new medical possibilities have been presented by the media.

The main question addressed in this thesis is: Which sources are used by journalists writing about medicines in daily newspapers and family or women's magazines? De choice of the sources determines to a large extent what kind of information about medicines becomes news.

In chapter 2 the sources used by journalists writing about medicines in daily newspapers are described. The results of this chapter are based on interviews with seven journalists and a content analysis of five daily newspapers.

In the interviews we asked the journalists about their sources of ideas and their sources of information. The scientific and medical literature is an important source of ideas, like press releases from universities. Press releases from pharmaceutical companies do play a role as source of ideas but are less important. Besides these sources, personal contacts between a journalist and a researcher can also lead to an idea for an article.

The most important source of information is the scientific and medical literature. Two reasons were given: (1) the most important developments are described in the journals and (2) the research that is reported is peer-reviewed prior to publication by experts giving the journalist a reasonable guarantee that the study has been performed properly and conclusions are drawn correctly. Direct contact with researchers is also important to gather information for an article. The pharmaceutical industry is not important as source of information according to the journalists because of the commercial interest companies have in mass media publicity.

The journalists have access to several journals, like the *New England Journal of Medicine, Science, Nature, The Lancet*, and the *British Medical Journal* to search for ideas and information. Besides these international scientific and professional medical journals, all the journalists read at least two Dutch medical or pharmaceutical journals and almost everyone read a popular science journal (e.g. *New Scientist*).

The content analysis of the newspaper articles on medicines shows the journals and researchers to be the important sources of

information. Noticeable is that in about 20% of all the articles a pharmaceutical company is mentioned.

In chapter 3 the role of the scientific and medical literature is studied in more detail. Our assumption is that drugs often discussed in the professional literature are also often discussed in the daily newspapers. In other words, we might well expect the scientific medical literature to set the agenda for the newspapers. A content analysis of scientific medical journals was combined with a content analysis of Dutch daily newspapers to study the agreement in the two agenda's. To classify the drugs discussed in the journals and the newspapers we used the Anatomical Therapeutical Chemical (ATC) system.

The results show an agreement in the main groups of medicines discussed in the scientific medical literature and newspapers. In both the newspapers and the professional journals antiinfective medication (ATC:J) and drugs for the central nervous system (ATC:N) are the groups of medicines most frequently discussed. An interesting difference is the attention paid to gynaecological products (ATC:G) and the homeopathic preparations in the newspapers.

Although it has been suggested that "bad news" is more newsworthy then "good news", the negative consequences of the use of medicines received proportionally more attention in the professional literature than in the newspapers.

Our findings that the drugs most often discussed in the scientific and medical literature also appear in the mass media suggests the agenda-setting role of these journals. If therefore some diseases or pharmaceuticals receive more attention than others in mass media reporting this can be partly explained by the preoccupation of the professional journals and not, as has been suggested by critics of media reporting, by the preoccupation of journalists themselves.

In chapter 4 the role and choice of experts is studied in more detail. Two approaches, interviews and a content analysis, were used to answer the research questions.

The journalists indicated to be very careful with medical news, including news about (new) drugs. Therefore, an important reason for consulting experts is to check information on medicines. In about half of the newspaper articles an expert was cited. We can distinguish five categories of experts: (1) researchers; (2) functional experts (e.g. physicians); (3) spokespeople of interest or professional groups; (4) spokespeople for companies and (5) patients. The experts from the first en second category are more often cited alone in an article whereas the experts from the other categories

are often combined with other experts in an article. Journalists seem to differentiate between two sorts of experts: the objective experts - researchers and functional experts - and the subjective experts - patients and spokespeople of interest groups and pharmaceutical companies.

The different experts, including patients, cited in the same article gave the same or complementary information. This is in contrast with, for example, political reporting, where experts are used to express different views.

The results of this chapter show that the journalists are able to find relevant experts to give them information about various medicines.

In chapter 5 we studied the role of the lay press as a communication channel for pharmaceutical companies. The results of this chapter are based on interviews with eight PR officers of pharmaceutical companies. The results of this study show that information from the pharmaceutical industry to the general public has become increasingly extensive and emphatic. Pharmaceutical companies consider that it is important to inform a lay audience about their products and about the diseases for which they can be used. The lay press, both daily newspapers and family magazines, can play an important role in informing a lay audience about diseases and new or improved products. If the lay press pays attention to these products many potential 'users' can be reached and the image of the company might be improved. Since directives promulgated by the European Union forbid the advertising of prescription drugs to the general public, one sees that pharmaceutical companies do approach mass media journalists with information about products in various ways at different moments. When an innovative medicine is approved, a press conference is sometimes organized. It appears to be common, on such occasion, to invite independent scientists and physicians to give information about the new product to the journalists who attend. Because journalists receive many invitations the respondents suggested a need for caution in such invitations to journalists. Another newsworthy event might be when something goes wrong with the company or one of its products. The mass media do play an important role in warning users of a prescription drug quickly, and not all users can be traced and will be informed through health care professionals, even in the Netherlands where health care is intensive and well organized.

In chapter 6 we studied the family magazines. The results in this chapter are based on interviews with four journalists and a content analysis of three family magazines.

The journalists reported to use different sources to get ideas for articles on health, illness and drugs. Letters from the readers, ideas brought up by colleagues, daily newspapers and press releases from different sources were mentioned as important sources of ideas. Only one respondent considered scientific and medical journals to be important sources of ideas and information. The magazines receive many letters from their readers. One of the respondents estimates that the magazine receives 200 letters a week, of which about twothirds concerned medical questions. In the provision of information physicians and medical specialists play an important role as sources of information for journalists. There is, however, until now no role for the pharmacist as source of information on medicines in family magazines.

Sometimes a magazine co-operates with a pharmaceutical company. A company may finance an enclosure about a disease or group of drugs.

The results of this study show that gynaecological products as well as drugs for the central nervous system receive much attention in family magazines. The kind of information given about medicines is limited. Only a proportion of the publications pay attention to the side effects of a drug therapy. Therefore health professionals confronted with patients asking questions about drugs in response to publications in family magazines should realize that the patient knows the name of a drug but is seldom informed about other aspects of the therapy, such as side effects.

In chapter 7, the final chapter, the results are discussed after making some remarks about the methods used.

In this study the approach has been qualitative because it is exploratory and qualitative methods are well suited in this type of study. The qualitative approach (in depth interviews) was combined with a quantitative approach (content analysis) in chapter two, four and six. The combination of a quantitative and qualitative approach should be used more often in this field of research. As shown in this thesis, the differing research approaches provide us with complementary information and have been very useful in the understanding of the process of making news about medicines.

The results of this thesis show the medical and scientific community to be the most important source of information used by newspaper journalists. This source may also have an interest in

mass media publicity. Sometimes researchers try to attract media exposure since publicity is thought to benefit applications for medical grants. Another reason to supply journalists with information about "unpublished" results is that rapid dissemination of information about promising new therapies is crucial for patients with severe illnesses that have no effective treatment; only for a tiny minority of studies, this urgency justifies unconventional communications. Journalists prefer to report about studies published in scientific and medical journals because of the peer-review system. Journalists indicate that a peer-review system is not always waterproof citing disputes involving the work of the Dutch professor Buck.

The criticism that bad news is more newsworthy than good news, cannot be confirmed in our study. On the contrary good news about medicines received more attention in newspapers than bad news. With respect to this point, the criticism that the way in which the mass media portray therapeutic developments is too optimistically seems true. This criticism also involves the scientific community who prefers to communicate their stories of success.

Some of the forms of criticism are related to differences in opinions about the role the mass media should serve. Especially health educators think that mass media journalists should have a responsibility and a role in patient education and counselling. Therefore, they are very concerned with the lack of practical information and the fact that some diseases are underreported in the mass media. Science journalists do think they have a task informing a general public about developments in science and to provide their audience with practical information about these developments. Science journalists, however, are autonomous in the selection of topics. They are guided by latest trends in science, not by the needs of health educators.

Family magazines, on the other hand, do provide their readers with practical information on several topics; health educators could try to co-operate with family magazines. This kind of co-operation has, in our opinion, several advantages. Family magazines do play a major role as an information source for the general public on health topics. Magazines could play a major role in health education, since the editors do know their audience very well. They know the needs, perceptions and language of their readers and are, therefore, in a position to pass on health messages in an effective way to a large audience. Their audience is, in fact, very interested in health related information. The pharmaceutical in-

dustry is well aware of the potential of this communication channel and is already using it. Health educators could try to co-operate with these magazines in a similar way, instead of wasting money to produce yet further brochures. If family magazines wish to assume a degree of responsibility in patient education they should pay attention to the side effects of drugs in all articles.

This thesis shows that journalists do use relevant information sources when writing about medicines. Finally journalists are responsible for articles in newspapers and family magazines, however, experts have a co-responsibility, because they are consulted by journalists. Experts have to supply journalists with balanced information on medicines. If an expert is asked for advise on something he is not an expert on, he should make that clear to a journalist and advise the journalist to consult someone else.

SAMENVATTING

Mensen zijn zeer geïnteresseerd in informatie over gezondheid. Uit onderzoek blijkt dat men meer interesse heeft in nieuwe medische ontdekkingen dan in nieuws over sport. In de kranten en tijdschriften wordt dan ook regelmatig aandacht besteed aan gezondheid en ziekte. Ook op de tv en radio komt dit nieuws aan bod. Zowel "leken" als mensen werkzaam in de gezondheidszorg en het wetenschappelijk onderzoek gebruiken de massamedia als bron van informatie over ziekten en (nieuwe) therapieën.

Er is de afgelopen decennia veel discussie geweest over de effecten van berichten in de massamedia. Op het gebied van geneesmiddelen zijn er verschillende voorbeelden beschreven waarin berichten in de massamedia effect hadden. Zo leidden berichten over bijwerkingen van "de pil" in de jaren 70 tot een sterke afname in het gebruik van dit anticonceptiemiddel. Ook speelde de massamedia een belangrijke rol bij het informeren van gebruiksters van het Neotigason® over de ernstige gevolgen van dit middel bij zwangerschap. Niet alleen negatieve berichten over geneesmiddelen hebben effect ook zijn er effecten van positieve berichten bekend. Volgens een bekend Nederlands gynaecoloog hebben de damesbladen zoals Libelle en Margriet een belangrijke rol gespeeld bij de introductie van laag gedoseerde anticonceptiva. In de damesbladen lazen gebruiksters dat deze nieuwe pillen beschikbaar waren en voordelen hadden boven de "oude" pil, en informeerden daarom bij hun huisarts naar deze nieuwe middelen. Berichten in de massamedia kunnen eveneens invloed hebben op geneesmiddelbeleid. Zo is eind 70 jaren het geneesmiddel Halcion® onder invloed van publieke druk in Nederland van de markt gehaald.

Zoals uit bovenstaande blijkt kunnen berichten in de massamedia belangrijke effecten hebben. Onderzoek in de massa communi-

catie heeft zich tot nu toe vooral gericht op het onderzoek naar dergelijke effecten maar er is weinig bekend over de totstandkoming van berichten; o.a. over hoe en welke berichten in het nieuws komen.

Vanuit de medische wereld is er regelmatig kritiek op de medische berichtgeving in de massamedia. Er zou bijvoorbeeld te veel aandacht worden besteed aan AIDS terwijl andere ziekten zoals kanker veel vaker voorkomen maar veel minder aandacht krijgen. Sommige berichten over nieuwe therapieën leiden tot valse verwachtingen bij het publiek. Ook zou de eenzijdige, vooral positieve, berichtgeving over medische ontwikkelingen leiden tot medicalisatie en een veel te optimistisch beeld over de wetenschappelijke ontwikkeling geven.

In dit proefschrift staan journalisten werkzaam voor kranten en damesbladen centraal. Er is gekeken naar welke bronnen deze journalisten gebruiken wanneer zij over geneesmiddelen berichten. De keuze van bronnen bepaald in belangrijke mate welke informatie in het nieuws komt.

In hoofdstuk 2 worden de bronnen van journalisten werkzaam bij Nederlandse kranten beschreven. De resultaten in dit hoofdstuk zijn gebaseerd op interviews met zeven journalisten en op een analyse van berichten over geneesmiddelen uit vijf dagbladen. In de interviews is onderscheid gemaakt tussen bronnen voor ideeën en informatiebronnen. Wetenschappelijke en medische tijdschriften zijn voor journalisten een belangrijke bron van ideeën, evenals persberichten van universiteiten. Persberichten van farmaceutische bedrijven spelen volgens de journalisten wel een rol als ideeën bron maar zijn veel minder belangrijk. Daarnaast kunnen ook persoonlijke contacten tussen onderzoekers en journalisten een idee voor artikel of bericht opleveren.

Als bron van informatie zijn de wetenschappelijke en medische tijdschriften het belangrijkst. De journalisten geven hiervoor twee verklaringen, ten eerste worden de belangrijkste nieuwe wetenschappelijke ontwikkelingen in deze tijdschriften besproken en ten tweede zijn artikelen, geplaatst in deze tijdschriften, voor publikatie kritisch bekeken door experts (peer review). Dit laatste geeft een journalist een garantie voor de kwaliteit van het artikel. Ook onderzoekers spelen een belangrijke rol als informatie bron. De farmaceutische industrie is volgens de journalisten geen belangrijke bron omdat de industrie een commercieel belang heeft bij berichten over hun eigen produkten en daarom waarschijnlijk geen objectieve informatie zal geven.

Om aan ideeën en informatie te komen beschikken de journalisten over verschillende wetenschappelijke en medische tijdschriften zoals de *New England Journal of Medicine, Science, Nature, The Lancet* en de *Britisch Medical Journal*. Daarnaast ontvangen zij ook tenminste twee Nederlandse tijdschriften en heeft een aantal van hen een abonnement op een populair wetenschappelijk tijdschrift, zoals de *New Scientist*.

Uit de analyse van de kranteberichten over geneesmiddelen komt ook naar voren dat tijdschriften en onderzoekers van universiteiten belangrijke informatiebronnen zijn. Opmerkelijk is echter, dat in bijna 20% van alle berichten een farmaceutisch bedrijf wordt genoemd.

In het derde hoofdstuk 3 wordt de rol van de wetenschappelijke tijdschriften als bron nader bestudeerd. We gaan hierbij van de veronderstelling uit dat geneesmiddelen die vaak in de wetenschappelijke tijdschriften worden besproken ook in de kranten vaker besproken worden. Met andere woorden dat de wetenschappelijke tijdschriften de agenda bepalen van de kranten. Om de overeenkomst tussen de agenda van de tijdschriften en de agenda van de kranten te bepalen is de inhoud van beiden over een bepaalde periode bestudeerd. Om de geneesmiddelen te classificeren is gebruik gemaakt van het ATC (Anatomical Therapeutical Chemical) systeem.

De beide agenda's komen goed overeen, in zowel de wetenschappelijke tijdschriften als de kranten komen 'Antibiotica' (ATC:J) het meest voor, gevolgd door middelen toegepast bij aandoeningen van het 'Centraal Zenuwstelsel' (ATC:N). Een interessant verschil is dat in de kranten de 'Gynaecologische preparaten' (ATC:G; bijvoorbeeld "de pil"), meer aandacht krijgen dan in de wetenschappelijke literatuur. Hetzelfde geldt voor homeopathische middelen. Opvallend is de grote aandacht voor vaccins in zowel de professionele literatuur als de kranten.

Alhoewel er wordt gesuggereerd dat kranten meer aandacht besteden aan slecht dan goed nieuws hebben wij juist het omgekeerde waargenomen. Negatief nieuws over geneesmiddelen betreft 14% van de berichten in de kranten terwijl 26% van de artikelen in wetenschappelijke tijdschriften negatieve aspecten belichten.

De overeenkomst tussen de agenda's van de wetenschappelijke tijdschriften en van de kranten suggereert dat er inderdaad sprake zou kunnen zijn van agenda-setting. Dat sommige ziekten meer aandacht krijgen in de massamedia zou kunnen voortkomen uit de aandacht voor deze ziekten in de professionele literatuur en

niet, zoals door sommigen wordt gesuggereerd, uit de preoccupatie van journalisten.

In het vierde hoofdstuk wordt de rol en de keuze van experts verder onderzocht. De resultaten in dit hoofdstuk zijn gebaseerd op interviews met journalisten en een analyse van kranteberichten over geneesmiddelen.

De gevolgen die berichten over medische onderwerpen kunnen hebben, zijn voor de journalisten de belangrijkste reden zeer voorzichtig te zijn met medisch nieuws en veelvuldig experts te raadplegen. In ongeveer de helft van alle berichten over geneesmiddelen worden namen van geraadpleegde, meestal Nederlandse, deskundigen genoemd. De deskundigen kunnen we onderverdelen in de volgende vijf categorieën: (1) onderzoekers; (2) functionele experts (artsen, apothekers enz.); (3) woordvoerders van patientenverenigingen of beroepsgroepen; (4) woordvoerders van farmaceutische bedrijven en (5) patiënten (ervaringsdeskundigen). Deskundigen uit de eerste twee categorieën worden vaker als enige deskundige in een kranteberícht genoemd dan experts uit de laatste drie categorieën. Er lijkt een onderverdeling gemaakt te worden tussen objectieve en onafhankelijke experts (onderzoekers en functionele experts) en subjectieve experts (woordvoerders van belangenorganisaties en bedrijven tezamen met patiënten).

Opvallend is dat als er verschillende deskundigen in een artikel worden geciteerd, zij meestal dezelfde of aanvullende informatie geven. Dit is in tegenstelling met andere onderwerpen in de journalistiek, bijvoorbeeld politieke verslaggeving, waar verschillende experts of woordvoerders juist aangehaald worden omdat zij tegenovergestelde standpunten hebben.

De resultaten van dit hoofdstuk laten zien dat de journalisten relevante deskundigen raadplegen en om informatie vragen.

In het vijfde hoofdstuk staat de farmaceutische industrie centraal. De gegevens voor dit hoofdstuk zijn verzameld door middel van interviews met woordvoerders van zeven farmaceutische bedrijven. Het informeren van een algemeen publiek over nieuwe ontwikkelingen op farmaceutisch gebied wordt steeds belangrijker. De woordvoerders van de bedrijven geven hiervoor twee redenen. Allereerst worden patiënten steeds mondiger en is er sprake van een emancipatie-proces in de gezondheidszorg, daarom is het van belang dat men goed geïnformeerd is over ziekten en de verschillende behandelingsmogelijkheden. Als tweede reden geven de respondenten het "slechte" imago van de farmaceutische industrie. De massamedia spelen een belangrijke rol in de verspreiding van informatie vanuit de farmaceutische industrie naar

een algemeen publiek omdat de farmaceutische bedrijven zelf weinig mogelijkheden hebben zich tot het publiek te richten. Het adverteren voor geneesmiddelen op recept in de lekenpers is verboden.

Farmaceutische bedrijven benaderen journalisten op verschillende momenten in het ontwikkelingsproces van nieuwe geneesmiddelen. Een van de belangrijkste nieuwsmomenten is de officiële registratie van een nieuw middel. Als een geneesmiddel geregistreerd is, kan het op de markt gebracht worden. Wanneer een bedrijf een innovatief middel op de markt brengt wordt de pers geïnformeerd. Zo werd bij de introductie van het antimigraine middel Imigran® een persconferentie georganiseerd waar verschillende deskundigen informatie over dit geneesmiddel gaven. In de massamedia werd veel aandacht aan de introductie van dit geneesmiddel besteed. De woordvoerders van de bedrijven geven aan dat dit soort evenementen alleen georganiseerd worden als het om een echt nieuw geneesmiddel gaat. Journalisten ontvangen al veel uitnodigingen en zijn daarom zeer selectief. Het is voor een bedrijf belangrijk haar relatie met de journalisten goed te houden en hen daarom alleen uit te nodigen als er echt nieuws is.

Een ander moment wanneer de massamedia een belangrijke rol spelen, is als er iets aan de hand is met een van de produkten en de gebruikers direct geïnformeerd moeten worden. Alhoewel de gezondheidszorg in Nederland zeer goed georganiseerd is, blijkt dat niet altijd alle gebruikers via dit systeem gewaarschuwd worden.

In hoofdstuk zes staan de damesbladen centraal. De gegevens in dit hoofdstuk zijn gebaseerd op interviews met vier redactrices werkzaam bij damesbladen en op een analyse van de inhoud van drie damesbladen.

De groep geneesmiddelen die in de damesbladen het meest besproken wordt zijn de 'Gyneacologische preparaten', tot deze groep behoort de anticonceptie-pil. Daarnaast is er in de damesbladen veel aandacht voor geneesmiddelen uit de groep 'Centraal Zenuwstelsel', tot deze groep behoren onder andere pijnstillers, kalmerende middelen en slaapmiddelen. De geneesmiddelen worden vooral besproken in de vragenrubriek over medische onderwerpen. Alle vier de damesbladen ontvangen zeer veel brieven van hun lezers. Eén van de respondenten schat dat er wekelijks zo'n 200 brieven binnenkomen, waarvan ongeveer 140 vragen over medische zaken bevatten. Deze brieven vormen voor alle bladen een belangrijke bron voor ideeën, niet alleen voor de vragenrubriek, maar ook voor artikelen. Andere bronnen van ideeën zijn collega-

's, kranten en persberichten. De belangrijkste informatiebronnen zijn artsen. Opmerkelijk is dat de apotheker zelden om advies gevraagd wordt.

Soms werken de bladen samen met een farmaceutisch bedrijf. Het bedrijf betaalt dan bijvoorbeeld de kosten van een speciale bijlage over een ziekte of een bepaalde geneesmiddelgroep.

Wanneer we nauwkeuriger kijken naar de soort informatie die over geneesmiddelen wordt gegeven is het opvallend dat er slechts in een derde van alle publikaties iets gezegd wordt over bijwerkingen van een geneesmiddel. Apothekers en artsen dienen zich dat te realiseren. Patiënten die informeren naar een geneesmiddel naar aanleiding van een publikatie in een damesblad moeten voorgelicht worden over de mogelijke bijwerkingen van een geneesmiddel.

Hoofdstuk 7 begint met een reflectie op de in dit proefschrift gebruikte onderzoeksmethoden. Waarna de resultaten van het onderzoek naar de bronnen worden samengevat en in relatie worden gebracht met de kritiek vanuit de medische professie op berichtgeving in de massamedia.

Het onderzoek in dit proefschrift is voornamelijk exploratief van aard. Kwalitatieve methoden zoals bijvoorbeeld diepte interviews, zijn zeer geschikt voor dit type onderzoek. De inhoudsanalyse is in een aantal hoofdstukken (2,4 en 6) naast de diepte interviews gebruikt. De combinatie van deze twee methoden leverde aanvullende informatie maar is ook gebruikt om bepaalde resultaten uit de interviews te checken. De combinatie van een kwalitatieve en kwantitatieve aanpak zou in dit soort onderzoek veel vaker gebruikt kunnen worden.

Dit proefschrift laat zien dat de wetenschappelijke en medische wereld de belangrijkste bron van informatie voor krantejournalisten is. Ook deze bron kan een eigen belang hebben bij publiciteit. Soms proberen onderzoekers aandacht van journalisten te krijgen voor hun onderzoek omdat publiciteit een positief effect kan hebben op de werving van geld voor het onderzoek. Een andere reden om journalisten van informatie over onderzoeksresultaten te voorzien voordat deze in de professionele literatuur zijn gepubliceerd is dat een snelle verspreiding van de resultaten van levensbelang voor patiënten is; dit is echter zelden het geval. Journalisten berichten bij voorkeur over onderzoek dat reeds gepubliceerd is in vakbladen vanwege de 'peer review'. Toch is een publikatie in een professioneel tijdschrift, ondanks de peer review, niet altijd een garantie voor de kwaliteit en juistheid. De journalisten in dit onderzoek zijn zich zeer bewust van het feit dat berichten over

nieuwe middelen tot valse verwachtingen kunnen leiden en zij refereren in dit verband naar de "Buck affaire."

Ook vanuit de medische wereld worden er kritische geluiden gehoord over berichten in de media. De kritiek dat slecht nieuws vaker nieuws is dan goed nieuws wordt in dit onderzoek niet bevestigd. De resultaten van dit proefschrift sluiten eerder aan bij de kritiek dat in de massamedia een te rooskleurig beeld van het wetenschappelijke onderzoek wordt geschetst. In de kranten is veel meer aandacht voor goed nieuws dan voor slecht nieuws.

In deze kritiek moeten echter niet alleen de journalisten betrokken worden maar ook de wetenschappelijke wereld zelf. De laatste rapporteert ook liever over haar succesverhalen.

Andere vormen van kritiek hebben te maken met de ideeën over de taak en rol van de journalistiek. Met name voorlichters vinden dat de massamedia een rol zouden moeten spelen in de gezondheidsvoorlichting, zij maken zich dan ook zorgen over het feit dat er in de media nauwelijks aandacht wordt besteed aan veel voorkomende ziekten zoals kanker en berichten nauwelijks praktische informatie bevatten. Journalisten werkzaam bij de dagbladen vinden dat zij het publiek over bepaalde ontwikkelingen moeten informeren. Bij de keuze van onderwerpen laten zij zich vooral leiden door de wetenschappelijke en medische wereld.

De redacties van de damesbladen weten goed welke behoeften en ideeën er bij de lezers van het tijdschrift leven, daarnaast hebben ze veel ervaring in het doelgroep-gericht schrijven en zijn hun lezers zeer geïnteresseerd in informatie over ziekte en gezondheid. De damesbladen zouden in de voorlichting over geneesmiddelen een belangrijkere rol kunnen spelen. Bij de informatieverstrekking over geneesmiddelen zou men dan wel meer aandacht moeten besteden aan de bijwerkingen.

Tot slot

Dit proefschrift laat zien dat journalisten zorgvuldig te werk gaan en veelvuldig informatiebronnen en experts raadplegen. Uiteindelijk is de journalist verantwoordelijk voor de berichten over geneesmiddelen. Deskundigen zijn echter mede verantwoordelijk immers, zij worden geraadpleegd om op een juiste wijze over geneesmiddelen te berichten. Deskundigen moeten journalisten van zorgvuldig afgewogen informatie voorzien. En "deskundigen" moeten, wanneer zij geconsulteerd worden buiten hun eigen specialisme, dit kenbaar maken aan de journalist en deze adviseren iemand anders te raadplegen.

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LIST OF PUBLICATIONS

L.T.W. de Jong-van den Berg, F.M. Haaijer-Ruskamp, **A.M. van Trigt**. Evaluatie van een voorlichtingsbrochure over geneesmiddelen en de overgang. Pharm Weekbl. 1988; 124: 870-6

A.M.van Trigt, L.T.W. de Jong-van den Berg, R. Vos, F.M. Haaijer-Ruskamp. Pharma-ROM-informatie of bijsluiter: is er verschil? Pharm Weekbl. 1990: 125: 404-9

A.M.van Trigt, L.T.W. de Jong- van den Berg, F.M. Haaijer- Ruskamp. Geneesmiddelen en zwangerschap in vijf vakbladen. Huisarts en Wetenschap 1991;34(10): 462-5.

A.M. van Trigt, F.M. Haaijer- Ruskamp, L.T.W. de Jong- van den Berg. Geneesmiddelen, zwangerschap en de lekenpers. T. Soc. Gezondheidsz. 1991: 69 (11): 453-7.

A.M. van Trigt, L.T.W. de Jong-van den Berg, F.M. Haaijer-Ruskamp, J. Willems, Th.F.J. Tromp. Journalists and their sources of ideas and information on medicines. Soc. Sci. Med. 1994; 38 (4): 637-643.

A.M. van Trigt, L.T.W. de Jong-van den Berg, F.M. Haaijer-Ruskamp, J. Willems, T.F.J. Tromp. Medical journalists and expert sources on medicines. Public Understand. Sci. 1994; 3: 309-321

A.M. van Trigt, C.M. Waardenburg, F.M. Haaijer-Ruskamp, L.T.W. de Jong-van den Berg. Questions about drugs: How do pregnant women solve them? Pharmacy World & Science 1994; 16 (6): 254-9

A.M. van Trigt, L.T.W. de Jong-van den Berg, J. Willems, T.F.J. Tromp, F.M. Haaijer-Ruskamp. The pharmaceutical industry and the lay press - the industry's point of view. Int.J. Risk Safety Med 1995; 7: 1-15

A.M. van Trigt, L.T.W. de Jong-van den Berg, M. Pasman, F.M. Haaijer-Ruskamp, J. Willems, T.F.J. Tromp. Information about drugs in family magazines. Pharmacy World & Science 1995; 17 (2): 48-53

A.M. van Trigt, L.T.W. de Jong-van den Berg, F.M. Haaijer-Ruskamp. Reporting research in medical journals and newspapers [letter]. BMJ 1995; 311: 62

A.M. van Trigt, L.T.W. de Jong-van den Berg, L.M. Voogt, J. Willems, T. F.J. Tromp, F.M. Haaijer-Ruskamp. Setting the agenda: Does the medical literature set the agenda for articles about medicines in the newspapers. Soc. Sci. Med (in press)

Annex 1

MEDICATION, PREGNANCY AND THE POPULAR PRESS

GENEESMIDDELEN, ZWANGERSCHAP EN DE LEKENPERS[1]

Abstract

People can gain information about medicines and pregnancy in several ways. Popular magazines also seem to play a role as source of information on this issue. Therefore we investigated the attention given to medicines and pregnancy, as well as the amount and kind of information given in four popular family magazines (Margriet, Libelle, Ouders van Nu, Kinderen). When compared to information on anticonception, menopause and breast feeding, much attention is given to pregnancy. Only in a small amount of these publications medication is mentioned; whenever medicines are mentioned, the only information given is an indication, name or functional name. The readers are therefore only informed about the fact that there is a drug available. Health care providers should realise that almost no attention is paid to the possible risks of medicines.

1 Published in Tijdschrift voor Sociale Gezondheidszorg, Gezondheid & Samenleving 1991; 69 (11): 453 - 457

A1.1 INLEIDING

In 1985 bracht de Gezondheidsraad een rapport uit, "Advies inzake teratogeniteit van chemische stoffen", waarin men onder andere de problemen ten aanzien van het geneesmiddelengebruik tijdens de zwangerschap belichtte. Er werd geadviseerd de Nederlandse bevolking voor te lichten over deze problematiek omdat er aanwijzingen waren dat er in Nederland te veel geneesmiddelen voorgeschreven/gebruikt werden. Men doelde hierbij op geneesmiddelen die gebruikt worden in verband met zwangerschap maar ook op middelen die bij gebruik tijdens de zwangerschap schadelijk kunnen zijn [1]

Wanneer men de vraag wil beantwoorden hoe de Nederlandse bevolking moet worden voorgelicht over de risico's van geneesmiddelengebruik tijdens de zwangerschap moet onder meer nagegaan worden welke informatie reeds beschikbaar is. Mensen kunnen op allerlei manieren aan informatie komen over gezondheid en ziekte: bijvoorbeeld door gesprekken met artsen, familie of bekenden; maar ook massamedia kunnen fungeren als informatiebron. Zo werden in een onderzoek onder vrouwen tussen de 45 en 50 jaar tijdschriften zoals Libelle en Margriet veelvuldig genoemd als bron van informatie over de overgang [2]. Ook tijdens de zwangerschap spelen tijdschriften een rol in de informatie voorziening [3], ook als het gaat over het gebruik van geneesmiddelen tijdens de zwangerschap [4]. Daarnaast zijn huisarts, gynaecoloog, verloskundige, diverse boeken en folders van belang als informatiebronnen.

In dit onderzoek wordt één van deze bronnen, nl. de tijdschriften, nader beschouwd. De vragen die in dit onderzoek centraal staan zijn:

Hoe groot is de interesse voor geneesmiddelen en zwangerschap in de lekenpers en hoe vaak en welke soort informatie wordt er gegeven over dit onderwerp?

A1.2 METHODEN

In een onderzoek onder 295 jonge moeders naar onder andere informatiebronnen over geneesmiddelen tijdens de zwangerschap werden Ouders van Nu, Kinderen, Libelle en Margriet van de tijdschriften het meest genoemd [4]. Daarom is in deze vier tijdschriften gezocht naar informatie gerelateerd aan zwangerschap. De informatie is ingedeeld in drie perioden: informatie over de pe-

riode voor de zwangerschap (verder aangeduid als conceptie), informatie over de zwangerschapsperiode en informatie over de borstvoedingsperiode. In de tijdschriften is naar publikaties gezocht door de titels van artikelen, vragen, columns etc. te bekijken in alle nummers verschenen in de tijdsperiode 1 januari 1989 tot 1 januari 1990; voor Ouders van Nu en Kinderen gaat het om 12 nummers, bij Margriet en Libelle om 52 nummers. Het is mogelijk dat door deze werkwijze relevante publikaties gemist zijn. In de analyse zijn alleen die publikaties meegenomen waarin lichamelijke aspekten centraal staan, dat wil zeggen zwangerschapsklachten maar ook onderzoeksmethoden zoals echografie; publikaties over relaties, werk, en dergelijke zijn buiten beschouwing gelaten.

De relatieve interesse voor de onderwerpen conceptie, zwangerschap en borstvoeding is bepaald door het aantal publikaties in Margriet en Libelle te vergelijken met het aantal publikaties over andere onderwerpen waarmee gezonde vrouwen te maken hebben, te weten anticonceptie en de overgang. Deze vergelijking is tot Libelle en Margriet beperkt omdat deze bladen al deze onderwerpen behandelen. Daarnaast is een schatting gemaakt van het aandeel dat de onderzoeksonderwerpen in nemen, door in 10 nummers per tijdschrift het aantal titels van artikelen in de inhoudsopgave te tellen, hierbij zijn titels in de rubrieken mode, culinair, interieur, enz. buitenbeschouwing gelaten omdat deze geen informatie over de lichamelijke kanten van conceptie, zwangerschap en borstvoeding kunnen bevatten.

De aandacht voor geneesmiddelen tijdens de drie perioden is op drie verschillende manieren bepaald:

1. Het deel van het totaal aantal publikaties per onderwerp waarin informatie over geneesmiddelen gegeven werd;
2. Het aantal publikaties over geneesmiddelen in relatie tot publikaties waarin andere risicofactoren (roken en drinken) aan de orde kwamen;
3. De mate waarin de lezers belangstelling toonden voor deze onderwerpen, afgeleid uit het aantal brieven, vragen en oproepen.

Bij de analyse van de publikaties is onderscheid gemaakt in het type publikatie, te weten ingezonden brief, vraag, artikel en oproep, om zodoende de inbreng van de lezers te kunnen bepalen, maar ook omdat de omvang per type publikatie nogal verschilde.

Daarnaast is in de analyse onderscheid gemaakt in het soort informatie dat gegeven wordt. Dit is op drie verschillende manieren bestudeerd. Allereerst is gekeken naar welk(e) geneesmiddel

(groep) besproken wordt opgesplitst naar tijdstip van gebruik (conceptie, zwangerschap, borstvoeding). Omdat uit onderzoek [5,6] naar behoefte aan schriftelijke informatie over geneesmiddelen is gebleken dat mensen vooral informatie willen over het gebruik, bijwerkingen, naam en doel van de behandeling zijn de gevonden publikaties op deze items gescoord. Daarnaast is onderscheid gemaakt tussen informatie afkomstig van deskundigen en informatie waarbij de ervaringen van vrouwen centraal staan. Vrouwen hebben immers zelf het gevoel door het lezen van persoonsgerichte artikelen kennis te verwerven over hoe andere mensen omgaan met problemen, ziekte en verdriet [7] 1989). De analyse is uitgevoerd door één persoon, de eerste auteur, om een zo uniform mogelijke beoordeling te verkrijgen.

Bij de presentatie van de resultaten wordt steeds onderscheid gemaakt tussen de familiebladen (Libelle, Margriet) en de categorale bladen (Ouders van Nu, Kinderen) omdat de familiebladen zich richten op vrouwen en de categorale bladen zich richten op ouders en aanstaande ouders zal in de familiebladen minder aandacht worden besteed aan de onderzoeksonderwerpen.

A1.3 RESULTATEN

Aandacht

Wanneer in Margriet en Libelle het aantal publikaties over zwangerschap (64 publikaties in 1989) wordt vergeleken met het aantal publikaties over de overgang (16) of anticonceptie (24) was de aandacht voor zwangerschap in deze bladen groot.

In de vier bladen samen zijn in totaal 260 publikaties gevonden op het gebied van zwangerschap waarvan driekwart afkomstig was uit de tijdschriften Ouders van Nu en Kinderen. Over de onderwerpen borstvoeding en conceptie zijn respectievelijk 25 en 56 publikaties gevonden (zie tabel 1). Daarnaast zijn er nog 14 berichten gevonden waarin lezers geattendeerd werden op voorlichtingsboeken of video's op het gebied van zwangerschap en/of borstvoeding. Van de artikelen in de familiebladen die mogelijkerwijs over conceptie, zwangerschap en borstvoeding zouden kunnen gaan, ging ongeveer 4% over de onderzoeksonderwerpen; bij de categorale bladen was dat ongeveer 40%.

In vergelijking tot borstvoeding en conceptie was de aandacht voor de lichamelijke aspekten van zwangerschap het grootst (zie tabel 1). Wanneer gekeken wordt naar het aantal publikaties dat informatie bevatte over geneesmiddelen, waren dat 45 publikaties over zwangerschap, 16 over conceptie en 11 met betrekking tot

Table 1
Aandacht voor geneesmiddelen per onderwerp per type publikatie

Type publicatie	Onderwerp					
	Conceptie		Zwangerschap		Borstvoeding	
	Familie	Categoraal	Familie	Categoraal	Familie	Categoraal
Vraag	1 [1]	- [1]	4 [20]	6 [47]	3 [4]	- [6]
Brief	- [6]	- [-]	1 [9]	3 [29]	1 [2]	1 [4]
Oproep	- [-]	5 [33]	- [-]	3 [45]	- [-]	1 [1]
Artikel	5 [6]	3 [5]	5 [11]	11 [34]	- [-]	3 [4]
Anders	1 [3]	1 [1]	2 [24]	10 [41]	1 [3]	1 [1]
Totaal	7 [16]	9 [40]	12 [64]	33 [196]	5 [9]	6 [16]
	16 [56]		45 [260]		11[25]	

Tussen, [ ] staat het totale aantal publikaties per onderwerp dat voldoet aan de inclusiec riteria; Familie = Familiebladen, Categoraal = Categorale bladen

borstvoeding (zie tabel 1). Proportioneel was dit 44% van de publikaties over borstvoeding, 28.6% van de publikaties over conceptie en 17.3% van de publikaties over zwangerschap.

In de vragenrubrieken zijn 10 publikaties gevonden die informatie over geneesmiddelen en zwangerschap bevatten. In één geval ging de vraag over de gevolgen van een geneesmiddel, namelijk DES. De andere vragen gingen in eerste instantie niet over geneesmiddelen maar over bijvoorbeeld een bepaalde klacht; in het antwoord werd informatie over geneesmiddelen gegeven. En van de drie vragen over borstvoeding ging over een geneesmiddel, de anticonceptie-pil. De vraag over conceptie ging niet over een geneesmiddel. Wanneer de daadwerkelijke inbreng van de lezers wordt bepaald, dan moet alleen gekeken worden naar het voorkomen van geneesmiddelen in hun eigen vragen, oproepen of brieven. De resultaten hiervan zijn weergeven in tabel 2.

Tabel 2
Percentage publikaties per onderwerp direct ingebracht door lezers

Onderwerp	Lichamelijke aspekten (%)		Geneesmiddelen (%)	
	Familie	Categoraal	Familie	Categoraal
Conceptie	44	85	0	56
Zwangerschap	45	62	17	21
Borstvoeding	67	69	80	33

De inbreng van de lezers was groter als het gaat om lichamelijke aspekten dan bij geneesmiddelen, dit gold voor alle onderwerpen. De interesse van de lezers, gemeten aan eigen inbreng, voor geneesmiddelen was relatief klein (zie tabel 2).

De aandacht voor geneesmiddelen was, in vergelijking met die voor andere risicofactoren, roken en het drinken van alcohol, groot. Wanneer echter het aantal algemene waarschuwingen ten

aanzien van het gebruik van geneesmiddelen werd vergeleken met het aantal waarschuwingen met betrekking tot roken of het nuttigen van alcohol, dan kwam dit bij geneesmiddelen betrekkelijk weinig voor (zie tabel 3). In de categorale bladen werden meer algemene waarschuwingen gegeven, ook ten aanzien van geneesmiddelengebruik, dan in de familiebladen.

Tabel 3
Aandacht voor geneesmiddelen ten opzichte van andere risicofactoren (in aantallen publikaties)

	Geneesmiddelen		Roken		Alcohol	
	Familie	Categoraal	Familie	Categoraal	Familie	Categoraal
Conceptie	7 [-]	9 [1]	- [-]	2 [2]	- [-]	2 [2]
Zwangerschap	12 [1]	33 [3]	4 [4]	6 [6]	1 [1]	8 [8]
Borstvoeding	5 [-]	6 [1]	- [-]	1 [2]	- [-]	1 [1]

Tussen, [ ] staat het aantal publikaties met een algemene waarschuwing t.a.v. geneesmiddel en, roken en drinken van alcohol. Familie = Familiebladen, Categoraal = Categorale bladen

Informatie over geneesmiddelen

De informatie die werd gegeven over geneesmiddelen in de verschillende publikaties varieerde van "mevrouw X kreeg medicijnen in verband met klacht Y" tot meer uitgebreide informatie over bijvoorbeeld de toepassing van homeopatische middelen bij zwangerschapsklachten.

In de verschillende publikaties werd over diverse geneesmiddelen informatie gegeven; enkele geneesmiddelen werden vaker besproken (zie tabel 4). In de publikaties over acetylsalicylzuur ging het over het gebruik van dit geneesmiddel tijdens de zwangerschap ter voorkoming van een miskraam of bij een niet goed functionerende placenta en hoge bloeddruk.

Wat betreft geneesmiddelen en borstvoeding kwamen zowel bromocriptine als homeopatische middelen in drie publikaties

Tabel 4
Aantal publikaties per geneesmiddel/geneesmiddelengroep (zwangerschapsperiode)

Geneesmiddel(-groep) *	Aantal publikaties
Weeënremmers	7
Homeopatische middelen	5
Acetylsalicylzuur	4
Maagzuurmiddelen	3
IJzerpreparaten	3
Vitamine-preparaten	3
Weeënopwekkers	3
Middelen tegen hoge bloeddruk	3
Middelen tegen postnatale depressie	3

* Alleen die geneesmiddelen(-groepen) zijn weergegeven die in meer dan één publikatie genoemd werden.

voor. Bij het thema conceptie waren clomifeen en hormooninjecties de meest genoemde geneesmiddelentherapieën. Hierbij valt op dat drie vrouwen middels een oproep op zoek zijn naar anderen met ervaring met een behandeling met clomifeen.

De gegeven informatie berustte 24 keer op ervaringen van vrouwen zelf met het geneesmiddel en 37 keer op informatie uit andere bronnen, meestal een deskundige. In drie publikaties werd zowel ervaringsinformatie als deskundige-informatie gegeven over het geneesmiddel. In de familiebladen werd even vaak ervaringsinformatie als informatie uit andere bron gegeven; in de categorale bladen overheerst de deskundige-informatie (zie tabel 5).

Tabel 5
Informatie over geneesmiddelen in diverse publikaties naar type informatie per onderwerp.

	Type informatie			
	Ervaring		Anders	
	Familie	Categoraal	Familie	Categoraal
Conceptie	3	1	4	2
Zwangerschap	6	10	4	20
Borstvoeding	2	2	3	2
Totaal	11	13	11	24

Oproepen en algemene waarschuwingen zijn buiten beschouwing gelaten, publikaties met zowel ervaringsinfor - matie als andere informatie zijn in beide categorien meegenomen.
Familie = Familiebladen, Categoraal = Categorale bladen

In alle publikaties die in dit deel van de analyse werden meegenomen, werd informatie gegeven over de indicatie voor het gebruik van het geneesmiddel; er is geen verschil tussen ervaringsinformatie of informatie uit andere bron. De vrouwen gaven vaker een functionele naam (zoals weeënremmer) dan een "echte" naam (dwz. stof- of merknaam); bij andere bronnen gold het omgekeerde. Geen van de vrouwen gaf informatie over de werking; bij de andere bronnen kwam dit drie keer ter sprake. In 27.1% van de publikaties werd informatie gegeven over bijwerkingen. De ervaringsinformatie gaf iets minder vaak aanwijzigen voor het gebruik maar ook in de andere publikaties kwam dit weinig voor (zie tabel 6).

Tabel 6
Soort informatie over geneesmiddel(en) naar type informatie.

	Ervaring		Anders	
	Familie	**Categoraal**	**Familie**	**Categoraal**
Waarom	11 [100]	13 [100]	11 [100]	24 [100]
Functionele naam	2 [18]	6 [46]	4 [36]	11 [46]
Naam	5 [45]	6 [46]	4 [36]	5 [21]
Werking	- [-]	- [-]	- [-]	3 [12]
Bijwerking(en)	2 [18]	4 [31]	2 [18]	8 [33]
Gebruiksaanwijzing	2 [18]	- [-]	3 [27]	2 [8]

Tussen, [ ] staat het percentage per categorie dat informatie geeft over een onderwerp.
Familie = Familiebladen, Categoraal = Categorale bladen

A1.4 Discussie

Libelle en Margriet richten zich op vrouwen in het algemeen terwijl Ouders van Nu en Kinderen bedoeld zijn voor (a.s) ouders. Dit verschil in doelgroep verklaart het feit dat in de laatste twee tijdschriften veel meer publikaties zijn gevonden over conceptie, zwangerschap en borstvoeding dan in de eerste twee. Maar ook in Libelle en Margriet is de aandacht voor het onderwerp zwangerschap groot in vergelijking met die voor de overgang of anticonceptie. Wanneer het aantal publikaties over zwangerschap in de vier onderzochte tijdschriften wordt vergeleken met het aantal over conceptie of borstvoeding is de aandacht voor zwangerschap relatief groot. Voor zowel zwangerschap als borstvoeding als conceptie geldt dat meer dan de helft van het totale aantal publikaties ingebracht is door lezers. Hieruit blijkt duidelijk de aandacht van lezers voor deze onderwerpen. Wel moet bij de interpretatie van deze gegevens rekening worden gehouden met het feit dat de redacties van de tijdschriften uiteindelijk bepalen welke vragen, brieven en oproepen geplaatst worden en er dus selectie plaats vindt. Het is niet uit te sluiten dat er meer brieven, vragen en oproepen bij de redacties binnenkomen dan er gepubliceerd worden.

Slechts een klein deel van de gevonden publikaties bevat informatie over geneesmiddelen, waartoe ook homeopatische middelen gerekend zijn. De directe inbreng van de lezers is hier beduidend kleiner. Wanneer gekeken wordt naar bijvoorbeeld de vraagrubrieken dan worden slechts twee vragen gesteld over geneesmiddelen. Dit kan betekenen dat vrouwen geen vragen hebben over geneesmiddelen tijdens de zwangerschap en borstvoeding, dat zij die vragen niet stellen aan deze tijdschriften of dat de redacties dit niet interessant vinden voor publikatie.

Wanneer gekeken wordt naar het soort geneesmiddelen waarover in de bladen iets gezegd wordt valt op dat er relatief veel aandacht wordt besteed aan geneesmiddelen om weeën te remmen of op te wekken. Relatief groot is ook de aandacht voor het gebruik van acetylsalicylzuur tijdens de zwangerschap ter voorkoming van een miskraam of bij een niet goed functionerende placenta en hoge bloeddruk. In hoeverre deze publikaties van invloed zijn geweest op het gebruik van acetylsalicylzuur is onduidelijk. Wel zijn twee vrouwen op zoek, middels een oproep, naar andere vrouwen die ervaring hebben met acetylsalicylzuur gebruik, mogelijk naar aanleiding van positieve berichten in de media. Acetylsalicylzuur is een vrij verkrijgbaar geneesmiddel. Het gebruik in bepaalde periodes van de zwangerschap is niet zonder risico [8].

Opvallend is dat drie vrouwen middels een oproep op zoek zijn naar anderen die ervaring hebben met een clomifeen-behandeling. Dit zou er op kunnen wijzen dat er weinig informatie beschikbaar is op dit gebied of dat potentiële bronnen niet die informatie geven die vrouwen willen of dat vrouwen juist van andere vrouwen willen horen hoe die zo'n behandeling ervaren hebben. In de bestudeerde tijdschriften wordt nauwelijks op de gevolgen van een dergelijke behandeling ingegaan.

De relatief grote nadruk op waarschuwingen bij het gebruik van alcohol of sigaretten is waarschijnlijk het gevolg van de vrije keuze die vrouwen hebben om deze middelen te gebruiken, terwijl bij het gebruik van geneesmiddelen dit keuze-element veelal afwezig is. Terwijl bij geneesmiddelen informatie gegeven kan worden over de indicatie, bijwerkingen, etc., valt over roken en drinken nauwelijks meer informatie te geven dan over de schadelijke invloed met daaraan gekoppeld een waarschuwing.

De algemene conclusie ten aanzien van de informatie over geneesmiddelen en zwangerschap in week- en maandbladen moet op grond van de hier gepresenteerde gegevens luiden, dat geneesmiddelen weinig ter sprake komen en waar ze wel ter sprake komen wordt er nauwelijks meer informatie gegeven dan de indicatie en een naam of functionele naam. De lezers worden vrijwel alleen geïnformeerd over het feit dat er een geneesmiddel is voor een bepaalde indicatie. In slechts een gering aantal publikaties wordt informatie afkomstig van vrouwen gecombineerd met informatie van deskundigen terwijl dit toch een goede vorm lijkt te zijn om informatie over te dragen.

Ondanks het feit dat over de effecten van berichten in de massamedia weinig bekend is en de betrekkelijk geringe informatie over geneesmiddelen, is het toch zaak dat de mensen werkzaam in

de gezondheidszorg zich realiseren dat tijdschriften een informatieve rol kunnen vervullen; immers vrouwen zelf noemen tijdschriften als informatiebron over zwangerschap en geneesmiddelen [4]. Daarbij is vooral de relatief geringe aandacht voor mogelijke risico's van geneesmiddelgebruik relevant. Wanneer patiënten vragen naar bepaalde geneesmiddelen naar aanleiding van publikaties in de lekenpers moet men er rekening mee houden dat zij nauwelijks op de hoogte zijn van mogelijke risico's en moet men hierbij de voorlichting zeker aandacht aan schenken.

REFERENCES

1 Gezondheidsraad, Advies inzake teratogeniteit van chemische stoffen. Staatsuitgeverij, 's Gravenhage 1985
2 Jong- van den Berg, L.T.W. de, F.M. Haaijer-Ruskamp & A.M. van Trigt, Evaluatie van een voorlichtingsbrochure over geneesmiddelen en de overgang. Pharm Weekblad 1989;124: 870-6
3 Aaronson, L.S., M.C. Macnee & S.K. Pfoutz, Seeking information: where do pregnant women go? Health Educ Quarterly 1988;15: 335-345
4 Jong-van den Berg, L. de & C. Waardenburg, Geneesmiddelgebruik tijdens zwangerschap. Styx-publications, Groningen 1991
5 Joubert P. & L. Lasagna, Patient package inserts. I. Nature, notions, and needs. Clin Pharm Ther 18 (1975) 507-513
6 Ridout S., W.E. Waters & C.F. George, Knowledge of and attitudes to medicines in the Southampton community. Br J clin Pharmac. 1986; 21 : 701-712
7 Hermes J. Sommige dingen doe ik alleen op uit vrouwenbladen niet uit de dagelijkse praktijk. Massacommunicatie 1989; 17 : 283 - 304.
8 Keirse M.J.N.C., Aspirine en zwangerschap. Ned.Tijd.v Geneesk 1990; 134: 1130-1134

ANNEX II

TRANSFER OF INFORMATION

The most simple form to describe the transfer or diffusion of information is shown in figure 1.

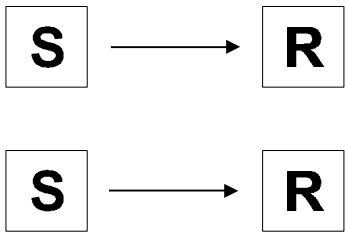

Figure 1

S sends information or a message to R. In this model the message is comparable to a virus. The virus is transmitted from one person to another and does not change. The distribution of the information can be described like an epidemiological model.

This simple model overlooks the fact that both the sender S and the receiver R, encode, decode, and interpret the information (see figure 2).

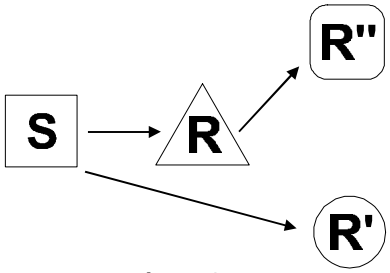

Figure 2

The information received by R is interpreted by R and can have a different meaning for R compared to S. Another receiver R' or R'' can interpret and use the information in a totally different way. The concept diffusion of information, which refers to a rather passive process in which, for example, a molecule diffuses through a membrane from one site to another and is not changed during this process, seems to be inappropriate to describe the communication process because (the meaning of) the information can change during the process.

The transfer of information is, in fact, even more complicated because the information can serve different functions. The same message can be used in different ways and can have different meanings. Furthermore, the fact that a message can have both a knowledge and an emotional component, makes description of the pro-

cess more sophisticated. For example, if one reads the same scientific paper twice the paper can have two different meanings, some information might have been more important the first time, other bits of information might be more important the second time (see figure 3).

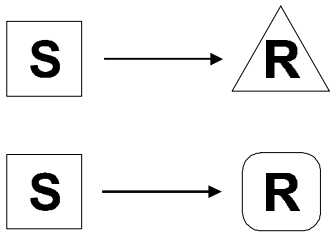

Figure 3

Some sources/senders send information to journalists unasked (S), while other sources, for example scientific journals, are chosen by the 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 1). 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 (see figure 4).

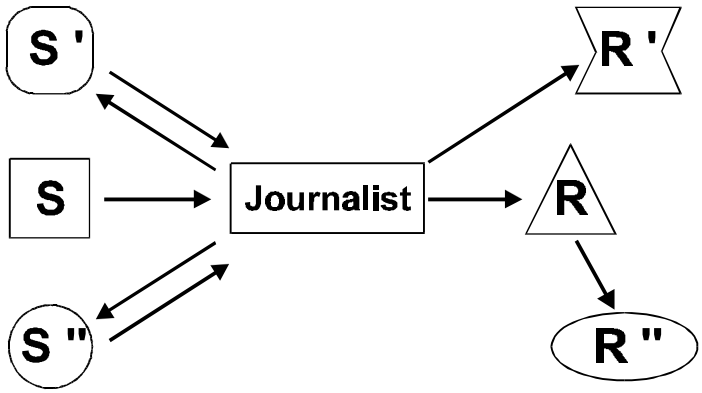

Figure 4
Position and role of journalist in the transfer of information

REFERENCES

1 Cuilenburg J.J van, Scholten O, Noomen G.W. Communicatiewetenschap. Coutinho, Muiderberg, 1992.
2 Meadows A.J. Communication in science. Butterworths, London, 1974.
3 Röling N.G., Kuiper D., Janmaat R. Basisboek Voorlichtingskunde. Boom, Meppel, 1994.
4 McQuail D, Windahl D. Communication models for the study of mass communication. Longman, London, 1981.