

Medical Researchers and the Media

Attitudes Toward Public Dissemination of Research

Michael S. Wilkes, MD, PhD, Richard L. Kravitz, MD, MSPH

Objective.—To study the experience of recently published authors with the news media.

Design.—A self-administered questionnaire.

Participants.—All first authors of scientific articles published in *JAMA* and *The New England Journal of Medicine* during a 6-month period. Of 397 surveyed, 92% responded.

Main Outcome Measures.—Researchers were asked about (1) their experience with the news media, (2) their attitudes toward the dissemination of health-related research to the general public, and (3) their attitudes toward the lay press.

Results.—Of respondents, 65% stated that their research was discussed in the lay press, and 60% reported that they were directly contacted by the press. Researchers had positive attitudes toward the press; 86% reported that news reports based on their research were accurate and 44% felt that media coverage would help them achieve their overall professional goals. Positive aspects of media coverage most frequently endorsed were that (1) it improves the image of the profession, (2) it informs the professional community of their research, and (3) it allows the public to understand the topic better. Negative aspects of media coverage were (1) it gives the impression that the researcher is seeking publicity, (2) it creates jealousy among colleagues, and (3) it takes too much time. Researchers were not eager to change the existing dissemination process, yet they endorsed the need for uniform standards concerning relations with the press.

Conclusions.—The majority of first authors in two leading medical journals reported substantial media coverage of their research, expressed generally positive sentiments about the press coverage of their work, and expressed a need for consensus on interactions involving the press.

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SOME JOURNALISTS and others wishing rapid access to medical research complain that several barriers prevent the timely dissemination of medical information.^{1,2} Examples of such barriers include news embargoes and the placement of restrictions by medical journals on researchers' contact with the media—the so-called Ingelfinger rule. Some of these barriers result from the scientific process itself, including peer review and manuscript revision. Others are imposed by the organizations that will ultimately disseminate the information, such as medical journals and research centers.

Journal editors have defended these procedures as necessary to protect the public from exaggerated claims and results.³⁻⁵ On the other hand, some journalists have charged that medical journals regularly delay the public release of information to maximize the potential for media coverage.^{1,6} The assumption is that increased media coverage will add pres-

tige and attract both subscribers and talented authors (G. D. Lundberg, MD, oral communication, April 1990). In any case, a debate exists over the proper relationship between medical researchers, medical journals, the lay press, and the public.

For editorial comment see p 1026.

As the producers of scientific information, medical researchers have a vital stake in this debate, yet their voices are rarely heard, and their views have not been studied systematically. Anecdotal reports suggest that some medical researchers have a strong dislike for contact with the media and avoid such contact whenever possible. These researchers complain that media coverage of medicine is inaccurate and misleading.^{7,8} Other researchers perceive that scholarly publications are not sufficient to maintain their professional momentum, arguing that visibility in the media is necessary to assure them a favorable public image.⁹ Still other researchers claim they do not enjoy their contact with the media, but recognize a duty to make public the

results of their work, particularly when the work is funded from public monies.^{10,11}

To determine the attitudes of medical researchers toward the news media and toward policies related to the dissemination of medical information, we surveyed the first authors of 397 scientific papers appearing in *The New England Journal of Medicine* (*NEJM*) and *JAMA*. These authors were selected to represent successful medical researchers who had recently published in prestigious medical journals and who were, therefore, in a position to report on their experiences with the media. Specifically, we addressed three research questions. First, what is the experience of recently published first authors with the news media, and how do the authors assess that coverage? Second, what are medical researchers' attitudes toward the news media? Third, what policies do researchers feel should govern the relationship between researchers and the media?

METHODS

Selection of Journals

Based on interviews we conducted with several American medical journalists representing print media (newspapers and magazines) and the electronic media (television and radio), we determined that media coverage is most likely to result from an article published in *JAMA* or *NEJM*.

Sampling

We obtained all issues of *JAMA* and *NEJM* for a 10-month period beginning in January 1989 and ending with October 1989. In each issue all original scientific articles were identified. Two trained research assistants independently excluded from the study all editorials, review articles, policy and position papers, clinicopathologic conferences, and the like. There was complete agreement on exclusions. After exclusions, we had identified 241 scientific papers from *JAMA* and 173 from *NEJM*. When the media contact a medical researcher in pursuit of a news story, they usually communicate with the first author listed on the byline. Therefore, we compiled a list of all the first authors excluding all papers where the first author's address was not in North America (eight for *JAMA* and nine for *NEJM*).

From the Division of General Internal Medicine and Health Services Research, UCLA School of Medicine, Los Angeles, Calif.

The views expressed are those of the authors and do not necessarily reflect the views of the above institutions.

Reprints not available.

Table 1.—Demographic and Professional Characteristics of Researchers (N=367)

Characteristics*	No. (%)
Age, y (mean 42)	
<35	61 (17)
35-50	250 (68)
51-65	56 (15)
Sex	
M	289 (79)
F	78 (21)
Degree	
MD only	198 (54)
PhD only	99 (27)
Master's only	48 (13)
MD and PhD	22 (6)
Employment	
Academic	251 (68)
Government	91 (25)
Hospital	15 (4)
Other	10 (3)
Type of research	
Basic science	76 (21)
Clinical trials	93 (26)
Health services research/epidemiology	152 (42)
Other	38 (11)
Academic rank	
Professor	92 (25)
Associate professor	77 (21)
Assistant professor	99 (27)
Lecturer	15 (4)
Other	84 (13)
No. of articles published in peer review journals (first author) (mean=10)	
1-10	116 (31)
11-30	98 (27)
>30	153 (42)
No. of authored journal articles mentioned in the lay media (mean=4)	
0	44 (12)
1-2	153 (44)
3-5	105 (29)
>5	65 (15)

*For some questions there were missing responses.

Questionnaire Development

The self-administered questionnaire contained 68 questions and took about 25 minutes to complete. Physicians were asked about demographic characteristics, experience with the media, media coverage of the index article (the article for which they were selected to participate in the study), and attitudes toward policies and practices of medical journals. Attitudes and opinions of researchers were obtained using either five-point or four-point Likert scales (strongly agree to strongly disagree). Tables 2 through 4 contain the wording used in the attitudinal items. A copy of the survey instrument is available from the authors on request.

Survey Procedure

After pilot testing the instrument and making needed modifications, a self-administered questionnaire was mailed to the first author of each identified paper. In addition to the survey, first authors were mailed a cover letter describing the project, a \$5 bill, and a prestamped self-addressed envelope. In previous studies, even a small cash incentive has been shown to improve response rates among physicians.¹²

A follow-up letter, including a photocopy of the initial cover letter and the \$5 bill, was sent to nonrespondents 4

weeks after the initial mailing. Eight weeks after the initial package was sent, follow-up telephone calls were made, and if requested, an additional survey was sent to nonrespondents. Follow-up telephone calls were made again in 3 weeks. Ninety-four percent (219) of 233 authors selected from *JAMA* completed our survey, and 90% (148) of 164 authors from *NEJM* completed it. This resulted in an overall response rate of 92% for the 397 first authors.

Statistical Analysis

Observed differences between groups of individuals were evaluated with a χ^2 test. In all analyses $P < .05$ was used as the criterion of statistical significance.

RESULTS

Characteristics of Authors

Among 367 respondents, the median age was 42 years, 79% were male, 60% were physicians, and 68% were employed full time by academic institutions (Table 1). A plurality of respondents reported being engaged in health services research or epidemiology (42%), followed by clinical trials (26%) and basic science (21%). Forty-six percent held the rank of associate professor or higher. Most respondents had published more than 10 scientific articles appearing in peer-reviewed journals. Only 12% had never had one of their articles mentioned in the lay media (Table 1). During their careers, respondents had been interviewed an average of 15 times by television or radio reporters, 13 times by newspaper reporters, and four times by national magazine reporters (data not shown in tabular form).

Recent Experience With the Media

Sixty-five percent of researchers reported that their recently published scientific article (the index article) received media coverage (43% in a local newspaper, 23% in a national newspaper or magazine, 36% in local electronic media, 34% in national electronic media, and 40% in trade papers where the readers are predominantly health professionals). The majority of respondents received coverage in more than one category; none received coverage in trade papers only. Fifty-eight percent of the authors stated that their names had been mentioned in the news coverage.

Contact between authors and the media was initiated by the media for 60% of the articles; less frequently, authors themselves contacted the media (11%). Nineteen percent of the authors thought that the public would consider their article uninteresting, and 25% felt the public would find the topic incomprehensible. Most researchers (67%) made special efforts to make themselves available to the

media by telephone immediately after publication of their article, and many were aided by media releases issued by their institutions (55% of the authors) or by the journal (23%). Twenty-nine percent participated in media conferences concerning the index article, 47% reported that they had not participated "but would if offered the chance," and 24% reported that they had not participated in press conferences and would "not be likely to participate" in the future. Thirty-six percent of this latter group considered participation in press conferences unethical professional behavior.

In terms of the level of coverage of their article, 71% felt that the index article received an appropriate amount of coverage given its topic and importance, 17% less coverage than it should have, and 11% more coverage than it should have. Eighty-six percent rated coverage of their scientific studies accurate; only 3% called the coverage inaccurate.

Attitudes Toward Media Coverage of Medical Science

Most respondents considered media coverage worth seeking. Fifty-one percent felt that news coverage of their research was important to their career, 58% felt good about receiving media coverage, and 44% believed that media coverage of their research would help them to achieve their overall professional objectives (data not shown in tabular form).

Table 2 lists researchers' perceptions of the advantages and disadvantages of media coverage. Eighty-four percent felt that media coverage benefited the public, 62% felt that it helped inform the professional community of their work, 46% felt it was important to their families, 39% felt it helped advance their careers, and 45% felt that they enjoyed seeing themselves in the media. Perceived disadvantages of media coverage included feeling that media coverage takes up too much time and effort (48%), it gives the impression that researchers are seeking publicity (47%), it creates jealousy among colleagues (30%), and it questions researchers' intentions (16%).

We postulated that researchers' attitudes toward the media could be influenced (1) by the extent of their prior media exposure or (2) by their seniority as researchers (as represented by the number of scientific articles they had published in peer-reviewed journals). We expected that researchers with greater previous media contact might be more favorably disposed toward the media. On the other hand, more extensively published authors, by virtue of their greater experience, might be in a better position to evaluate the role of the media. Therefore, we created two variables: media ex-

Table 2.—Perceived Advantages and Disadvantages of Media Coverage of Medical Research

Statement	Agreement, %				
	All Researchers (N=367)	Media Exposure		Authorship	
		High* (n=122)	Low† (n=123)	High‡ (n=122)	Low§ (n=122)
Advantages					
It helps me obtain grants	15	13	22	16	15
It allows the public to understand the topic better	84	88	81	82	85
It helps inform my professional community of my work	62	66	57	57	70
It advances my career	29	30	31	25	37
I enjoy seeing myself in the media	45	55	31¶	44	42
Media coverage is encouraged by my employer	46	58	36	51	40
It is important to my family/friends	46	48	38	45	44
It helps improve the image of my profession	63	60	55	57	65
It helps me receive more invitations to speak in public	46	51	43	41	49
Disadvantages					
It gives the impression that I am seeking publicity	47	45	48	54	40
It creates jealousy among my colleagues	30	34	31	36	25
It takes up too much time and effort	48	60	36¶	54	44
It inaccurately reports my research	38	39	38	33	43
It calls into question my intentions as a researcher	16	12	18¶	17	17

*Highest tertile of media exposure.

†Lowest tertile of media exposure.

‡Highest tertile of first-authored journal articles.

§Lowest tertile of first-authored journal articles.

||Significant at $P < .05$ (significant test based on agreement status; for simplicity, only agreement is shown).¶Significant at $P < .001$ (significant test based on agreement status; for simplicity, only agreement is shown).

posure and authorship. For each we divided the respondents into high, medium, and low tertiles. Comparisons are shown in the tables.

Compared with those with little media contact, respondents in the highest tertile for contact with the press were more likely to agree that media coverage facilitates public understanding of science (88% vs 81%) and provides personal enjoyment (55% vs 31%; $P < .05$) (Table 2). Those in the highest tertile were also more likely to report that contact with the media was encouraged by their employer. However, more high-tertile respondents felt that media coverage takes up too much time and effort (60% vs 36%; $P < .001$). There were no significant differences between respondents in the highest and lowest tertiles for authorship, except that those with more extensive publication records were more likely to agree that media coverage creates jealousy among colleagues (36% vs 25%; $P < .05$) (Table 2).

Researchers were somewhat critical of their media-exposed peers but nonetheless appeared to bear a certain grudging admiration for them. Although 61% perceived peers receiving media coverage as more aggressive than average, 46% felt that they usually promoted themselves to the news media. Thirty-seven percent thought that their peers receiving media coverage were less secure professionally than researchers who have not received much coverage. Only 17% felt that those who receive substantial media coverage are not the kinds of persons with whom

they would choose to work (data not shown in table). Compared with those in the low-exposure tertile, those in the high-exposure tertile were more likely to consider researchers with lots of exposure to be doing work of significance (25% vs 13%; $P < .05$), and to have no objections to working with them (20% vs 5%; $P < .05$). There were no statistically significant differences based on authorship experience.

Table 3 presents data on attitudes toward the placement of restrictions by medical journals on researchers' contact with the press, the so-called Ingelfinger rule. Questions related to the following statement, which is a composite of several journals' policies:

Many journals undertake review of scientific articles with the understanding that neither the substance of the article nor any of its pictures or tables have been published or will be discussed in public (including the lay news) prior to publication. This restriction does not apply to abstracts or to news reports based solely on formal and public presentations at such meetings, but press conferences at these meetings are discouraged.

Eighty-two percent of the respondents knew such a rule exists and 80% of those who knew of the rule agreed with it. Researchers felt that the rule serves a variety of functions: protection of journals' publication rights (86% agreement), preservation of an accepted norm within the research community (79%), protection of the public (54%), prevention of the dissemination of false information (63%), and the op-

portunity for community physicians to review the science before they see it in the news (56%). Respondents with the least prior media exposure (lowest tertile) were more likely than those with more prior exposure to agree that the rule protects the public (55% vs 47%; $P < .05$) and prevents the spread of false information (69% vs 54%; $P < .05$).

Researchers' operational understanding of the rule was assessed with the following question:

If you were approached by a *Washington Post* journalist interested in reporting on your as yet UNPUBLISHED but already accepted journal article, would you discuss it with him/her?

Although researchers appeared divided on the question (52% yes vs 48% no), few expressed a willingness to challenge journal editors on their policies. Among affirmatives, only 10% stated they would discuss their article without hesitation; 8% would first inform the journal editor and 82% would attempt to obtain permission from the editor. Of those who would not speak to the media prior to publication, 52% cited their own ethical standards, 42% claimed such discussions were forbidden by "most journals," and 6% cited other reasons.

Researchers' Attitudes Concerning Policies Involving the Media

Despite researchers' strong endorsement of the Ingelfinger rule, only 44% agreed that it is in the public interest to delay dissemination of medical research findings until community physicians

Table 3.—Researchers and the Ingelfinger Rule

Statement	All Researchers, % (N=367)	Media Exposure, %		Authorship Experience, %	
		High* (n=122)	Low† (n=123)	High‡ (n=122)	Low§ (n=123)
Agree with the stated policy	80	76	82	82	78
The policy protects the journals' publication rights	86	86	84	84	88
Protects the public	54	47	55	56	53
Prevents the dissemination of false information	63	54	69	62	65
Contributes to creating an impression of secrecy	46	48	49	40	54
Assures that community doctors review the science before it is reported on in the news	56	56	57	61	56
Preserves an accepted norm within the research community	79	79	75	84	73

*Highest tertile of media exposure.
 †Lowest tertile of media exposure.
 ‡Highest tertile of first-authored journal articles.
 §Lowest tertile of first-authored journal articles.
 || P<.05.

Table 4.—Researchers' Attitudes Toward Policy Issues Related to Media Coverage of Medicine

Statement	Agreement, %				
	All Researchers (N=367)	Media Exposure		Authorship	
		High (n=122)	Low (n=123)	High (n=122)	Low (n=123)
Press conferences at scientific meetings should not be allowed	27	20	28*	24	25
The press should be forbidden to attend medical meetings	9	7	8*	10	10
Researchers should not be allowed to talk with the media until their article comes out in print	23	12	26†	27	18
It is in the researcher's best interest to limit contact with the press	38	35	40	36	42
It is in the public's best interest not to hear/read about medical research until community physicians are able to first review the published articles	44	38	45	48	43
There should be a standard set of rules covering the interaction of the press and medical researchers	60	64	49*	57	64
Abstracts should not be discussed in public until published in a journal	38	32	39	42	35
To improve accuracy in news media, researchers should be required to discuss their findings with interested members of the press	23	19	23	23	24

*P<.05.
 †P<.01.

have a chance to review the findings (Table 4). Some respondents favored highly restrictive policies such as banning press conferences at scientific meetings (27% in favor), forbidding the media from attending such meetings (9%), or banning prepublication discussions of a scientific article between authors and the media (23%). Others (23%) favored policies requiring discussions with interested members of the media (Table 4). Although there was no groundswell of support for change, most respondents disagreed that limitations on contact with the media were in their own or the public's best interest, and 60% felt there should be a standard set of rules governing the interaction of researchers and the media (Table 4). The need for such rules was perceived to a greater extent by those with more past media exposure (64% vs 49%; P<.05) (Table 4).

COMMENT

In 1905, William Osler cautioned physicians not to "dally with the Delilah of the press," warning that to do so could undermine the confidence of their professional brethren.¹³ Since Osler's time the media's coverage of medicine has in-

creased markedly to keep pace with the public's increasing appetite for medical information. During this same period, media coverage has become useful in improving the prestige of institutions, bolstering scientists' careers, marketing medical products, and increasing the subscriptions and sales of medical journals.¹⁴

Experience With the Media

Most researchers surveyed for this study received media coverage of their journal article, and theirs was not a single dalliance: the majority had extensive previous media experience. Most of their news coverage occurred in the local newspapers, but a large amount came from national television and radio. Thus, respondents to this survey were in a good position to assess the media's coverage of their work and to evaluate policies governing the relationship of scientists, medical journals, and the press. Of course, journal editors, medical journalists, and medical scientists publishing in journals other than *JAMA* and *NEJM* may also be able to make critical contributions to the debate and should be the subjects of future studies.

Attitudes Toward Coverage in the Media

The majority of researchers in our study thought their work was both interesting and accessible to the public and were satisfied with the amount and quality of media coverage they received. Most felt that media coverage of medicine aided their careers and benefited the public. Yet many were guardedly critical of fellow researchers who received "excessive" media attention.

What explains this apparent ambivalence among authors whereby many researchers appeared to enjoy and benefit from media exposure, yet were suspicious of those who received an abundance of coverage? One possibility is that researchers understand the personal and public benefits of media dissemination of their work but perceive publicity seeking to be in conflict with professional norms.^{3,10,15} In the case of medical researchers, norms define a range of tolerable behaviors and serve as a guide for new members. Norms concerning the release of medical information can be traced back to Hippocrates, who exhorted physicians to avoid activities that "savoured of fuss or show."¹⁶

Medical sociologists have shown that young scientists come to understand social norms early on in their careers.¹⁷ Until the late 1970s, some medical students were taught that a physician's name should appear in the newspaper only at birth, marriage, and death.¹⁰ Young researchers may learn, through contact with elders and through editorials, that publicity and public attention are not consistent with the profession's norms. Thus, researchers must chart a narrow course between the needs of the public, the clamor of the press, and the norms of their profession. Miscalculation can have serious professional consequences.¹⁰

Although researchers were not united in their views toward policies governing their relationship with the media, 60% perceived a need for unambiguous guidelines. A large majority expressed support for current rules restricting access of the press to medical research prior to publication in a scientific journal. Yet an equally large majority felt that medical journal policies aimed at slowing or filtering the flow of medical information to the public may not always be in the public's best interest. Additionally, there was little support for imposing more restrictive policies on the media than currently exist, including limiting access of the press to medical meetings, further limiting researchers' contact with the press or limiting press conferences.

These observations should be interpreted in light of the divergent policies of several leading medical journals. For example, *NEJM* explicitly discourages press conferences,^{18,19} while *JAMA* policies are somewhat more flexible.²⁰ Nonetheless, if there is any need for substantial change in the nature or governance of the relationship between researchers, medical journals, and the media, its impetus will probably not come from the research community. However, even though most researchers appear relatively satisfied with current media policies, most would support the development of clear-cut

guidelines applicable to all researchers publishing in all medical journals.

Respondent's global assessments of media accuracy were less favorable than their judgments of how well their own index article was covered. This discrepancy may have resulted from negative experiences or selective recall; the accuracy of measuring an attitude improves as the reference is made more specific.²¹ Compared with those with less previous media exposure, medical researchers with more exposure were somewhat more positive about the personal and public benefits of media dissemination of their research. However, they were also cognizant of the large amounts of time and effort that maintaining a high media profile can demand. These same researchers were relatively skeptical about the supposed benefits of the Ingelfinger rule; compared with those with little past exposure, they were especially dubious that the Ingelfinger rule prevents the dissemination of false information. Because of the cross-sectional nature of this study, we can only speculate as to the relative importance of personality factors and past experience in producing these differences, which in any case were not large. It is interesting that there was not strong support for delaying dissemination to the public to allow community physicians to first review the findings. This is in contrast to the commonly expressed opinions.^{18,19}

This study has several limitations. All data were self-reported and, therefore, subject to recall bias. However, the index article was recently published, and it would be unlikely that the researcher would have forgotten details surrounding its publication. Furthermore, we asked for no sensitive material and guaranteed respondents confidentiality. Therefore, evasive answers, or a socially desirable response set,²² are unlikely.

We specifically examined one group of medical researchers—namely, those who published in the two medical journals most commonly mentioned in the lay

press. It was not our intention to randomly sample among the population of all medical researchers. Therefore, the observations, opinions, and attitudes expressed by this sample of researchers do not represent those of all medical researchers. However, they do represent those of accomplished researchers publishing in leading general medical, peer-reviewed journals. Researchers who choose to publish in these two highly visible and clinically oriented journals may be more favorably disposed to the media than other groups of researchers.

This study demonstrates that despite Osler's warnings, authors of significant studies published in high-profile medical journals can expect to interact frequently with the press. Because it is the nature of journalism to emphasize what is new and exciting, the limitations of medical research studies may not receive sufficient attention from the press. Medical researchers may need additional training to deal effectively with the media, thus protecting the public from conclusions that are exaggerated or overgeneralized. In light of these findings, media relations may take a place alongside biostatistics in the training curriculum of future medical researchers. Although the researchers we surveyed saw little need for fundamental change in the implicit rules governing their dealings with the media, most yearned for guidelines that would transcend the decisions of individual editorial boards. At the least, this research will help us to understand the views of one important party involved in the dissemination of medical information.

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