

Advertising in Health Journals

Robert Sommer and Barbara A. Sommer¹

A content analysis was made of advertisements in five medical and nursing journals. Advertisements occupied from 35 to 75 percent of total space. With the exception of the American Journal of Nursing, most of whose ads were for job recruiting, the dominant advertisers were pharmaceutical firms who filled from 56 to 87 percent of available advertising space and contributed from 64 to 96 percent of advertising revenues. Drug advertisements tended to be longer, make use of more illustrations, and feature more color than other advertisements. There was a stereotyped use of male and female models in portraying health professionals (nurses as female and physicians as male). No consistent pattern for portraying gender of patients was revealed. The implications of such a large percentage of revenues in four of the five journals from a single source are discussed.

Advertising in health periodicals remains a source of controversy, in terms of the large dollar amount spent and on the content and type of advertising as well.

Psychology Department, University of California, Davis, California, U.S.A. 95616.

This research was aided by a grant from the UCD Center for Consumer Research. The following students assisted in the content analyses: Ruedy Contreras, Marilyn Hampton, Deborah Heggie, David News-wanger, Delores Parker, Cassie Pierson, Michael Steel. Humphry Osmond provided helpful comments.

Estimates of the amount spent by the pharmaceutical firms on promotion and advertising range from \$400 million to over \$1 billion annually (Giges, 1973; Spake, 1974). This amount represents from 12 to 20 percent of total expenditures by the drug industry depending upon the country and method of calculation used (Hemminski, 1973). The large number of drugs coming on the market each year makes it difficult for physicians to keep abreast of new products. The most heavily used sources of information are journal articles and conversations with colleagues, followed by promotional literature and visits from manufacturers' representatives (Hess, 1974). Linn and Davis (1972) found that 73 percent of physicians surveyed rated advertisements in medical journals as either somewhat important or very important to them as sources of information about drugs. Social scientists have been concerned that advertising and promotional literature encourage the use of drugs when other treatments might be more appropriate (Hemminski, 1973; Peck and Applewhite, 1971), as well as the perpetuation of false stereotypes about women, the elderly, adolescents, and other identifiable groups (Mant and Darroch, 1975; Prather and Fidell, 1975; Smith, 1976). Other writers have criticized the ownership of proprietary journals by the drug industry (Seidenberg, 1971).

Most empirical studies have dealt with a single class of medical advertising (i.e., drugs) in a single periodical. Less attention has been paid to the amount of drug advertising relative to other kinds of advertising, to the placement of advertisements vis a vis editorial content, and differences in the amount of advertising among various health periodicals. A casual examination of health journals will disclose tremendous variation in the amount of drug advertising, its placement in regard to articles, and its relationship to editorial content.

Our interest in medical advertising is an outgrowth of research which involved the perusal of medical journals. At various times, we had been struck by insertion of drug advertisements into otherwise unrelated material. Further examination revealed that this often seemed deliberate. Some journals had an explicit policy of stretching the table of contents over several pages in order to increase the amount of preferred space for which advertisers would pay a surcharge. Another periodical interrupted every single article with a drug advertisement. What seemed more surprising in this instance was that the articles and editorial policies of this journal dealt with many medical and social problems which did not lend themselves to treatment by pharmaceutical means. Like other researchers, we too became interested in the stereotyped models shown in the advertisements. Further investigation of drug advertising through the medium of content analysis seemed warranted.

Pilot Studies

The first content analysis covered the first five issues of Volume 5 (1971) of the **Medical Aspects of Human Sexuality** (MAHS). Of the 1,144 pages in these five issues, 2 percent were devoted to editorial matters, 35 percent to articles, 58 percent to advertisements, and 5 percent to illustrations, mainly excellent color reproductions of paintings. There were 353 separate advertisements, approximately two-thirds of them in color, and two-thirds running two pages or more in length. Approximately 90 percent of the

advertisements were for oral medication (313), and a few others for lotions (13), suppositories (9), and injections (5). The remaining ads and the only ones not directly for medication were for IUD's (7), enemas (3), and pregnancy tests (3). All of the physicians (14) shown in the illustrations were male. No support staff, nurses, or laboratory technicians were shown. Of the patients depicted in the advertisements, there was a slight predominance of females. The content of the 67 substantive articles was very different from the advertisements. While most all of the ads had been concerned with physiological treatments, 62 of the articles concerned primarily the social, cultural, and psychological aspects of human sexuality ("Group therapy for homosexuals," "Sex and youth," and "Statutory rape"). Only five articles dealt specifically with physiological treatment of these problems. Every single one of the 67 substantive articles was interrupted by an advertisement.

Further analyses of advertising content were made for the **American Journal of Psychiatry**, the **Archives of General Psychiatry**, the **Journal of the American Medical Association** (JAMA), and the **American Journal of Nursing** (AJN). The first five issues of 1971, or if these were not available in our library, the first five issues of 1970, were used. The **American Journal of Psychiatry** and the **Archives of General Psychiatry** contained only a single two-page drug advertisement at the beginning of each issue. JAMA contained many advertisements, 87 percent of them for medications, and most of these in color and running two pages or longer. Most of the advertisements were grouped at the beginning of the magazine, before the medical articles. Most of the advertisements in the AJN were small and in black and white. The largest single category of ads in the AJN involved professional meetings and recruiting notices. There were 54 ads for clothing, including uniforms and special shoes. There was not a single clothing ad in any of the other journals that we examined. All the models for physicians were male. The patients were evenly divided to sex in JAMA,

but the AJN showed more female than male patients.

Further analysis was made of three successive 1976-77 issues of the **American Journal of Medicine**, AJN, and MAHS. Three-quarters of the ads in the **American Journal of Medicine** were in color, running one page or longer, and concerned oral medication. These trends were even more marked in MAHS. The nursing journal was different from the other two, with most ads in black and white, a half page or less in size, and most involving job recruiting, seminars, and publications.

All 1976 issues of **Psychiatric News**, an official publication of the American Psychiatric Association, were analyzed, with the exception of the May 7 issue (no. 9) which was missing from our library. There were 614 articles which occupied 28 percent of the total page space, while 777 advertisements occupied 72 percent of the space. The largest single category of advertisements involved drugs—328 ads covering 46 percent of available space, and 62 percent of all space covered by advertisements. It was found that 59 percent of advertisements but only 2 percent of the articles included pictures. While none of the articles utilized color, 37 percent of the advertisements used it. Three-quarters of the drug advertisements used color which comprised 95 percent of the ads with color. The mean length of articles was 24 column inches. The mean length of all advertisements was 53 column inches, and the mean length of drug advertisements was 72 column inches.

Main Study

All advertisements in the first four 1977 issues were analyzed in each of the following journals: **American Journal of Nursing** (AJN), **American Journal of Medicine** (AJM), **Journal of the American Medical Association** (JAMA), **Medical Aspects of Human Sexuality** (MAHS), and **Psychiatric News** (PN). A separate analysis sheet was made for each advertisement, excluding the small classified ads which were combined together and treated as a single section in each magazine. For each advertisement, except for the classified, the following data were recorded:

name and issue number, color, illustration, size, product, or service advertised, and the gender of any models used for physicians, nurses, patients, or other people.

The amount of advertising in each content area was computed three ways: number of ads in each category, amount of space, and cost. The data from the analysis sheets were transferred to punch cards and analyzed using the SPSS program.

Number of ads in each category. Excluding the classified sections, about half the advertisements used color, and four-fifths had illustrations of some kind. Virtually all of the ads in color (97 percent) used illustrations, but only about two-thirds of the black and white advertisements did. The percentage of colored advertisements in each of the journals was as follows: AJN 25 percent, AJM 74 percent, JAMA 83 percent, MAHA 87 percent, and PN 41 percent. There was less variability in the percentage of advertisements using illustrations, which range from 65 percent in **Psychiatric News**, up to 98 percent in MAHS.

Prescription drug manufacturers were by far the largest single source of advertising in all journals except for the **American Journal of Nursing**, which contained hardly any drug ads. The major content category in the AJN was job recruiting, and the next for books and film. The 6 percent of the ads for clothing were the only such ads in any of the five journals. **Psychiatric News** had a significant number of advertisements for seminars and for job recruiting, and the **American Journal of Medicine** for books and films. Aside from these, the number of advertisements in any single content category outside of prescription drugs was relatively minor.

There was considerable sex stereotyping in the models used to portray physicians and nurses. Of the 78 physicians shown, 75 were male, two included both male and female models, and one was indeterminate. Of the 186 nurses or lab technicians depicted, 167 were female, four male, 12 showed models of both sexes, and three were indeterminate. There was no definitive trend overall for the models used to depict patients. Of the 310 ads showing patients, 44 per-

TABLE 1
Percentage of Advertisements in each Content Category

Content	Journal				PN
	AJN	AJM	JAMA	MAHS	
Prescription drugs	0	73	70	80	47
Nonprescription drugs	3	4	12	2	0
External medications	1	0	0	7	0
Treatment apparatus	4	1	0	3	2
Dietary	1	0	2	1	0
Lab and hospital equipment	3	1	2	0	1
Clothing	6	0	0	0	0
Seminars, workshops	4	2	4	1	24
Books, films	12	15	6	1	8
Job recruiting, availability	64	1	4	0	10
Classified section	*	0	•	0	•
Other	1	4	0	5	9

* Classified section omitted from this analysis.

TABLE 2 Space Utilization in Four Issues of Each Journal

Journal	Total no.	Size of	Total space	Percent
	of pages (inc. covers)	each page (sq. cm.)	available (sq. cm.)	devoted to advertisements
AJN	750	560	420,000	45.5
AJM	1067	564	601,788	35.3
JAMA	437	574	250,838	50.3
MAHS	546	540	294,830	63.8
PN	180	1168	210,284	75.0

percent of the models were male, 36 percent female, and 20 percent either included both sexes (e.g., a husband and wife), or gender was indeterminate.

Amount of space. The next set of analyses concerned the amount of space devoted to each kind of advertisement. This was computed in square centimeters and includes the amount of space devoted to the classified section. For the five journals, about half the total page space was given over to advertising. This ranged from a low of 35 percent in the **American Journal of Medicine** to 75 percent in **Psychiatric News**.

For most of the categories, the figures on amounts of space do not differ appreciably from those based on the number of advertisements. Overall, 69 percent of advertising space went to ads with color, and 85 percent to ads with illustrations. The largest single amount of

advertising space went to prescription drugs, except in the **American Journal of Nursing**. The percentage of total advertising space devoted to advertisements for prescription drugs was 87 percent in the **American Journal of Medicine** and 86 percent in MAHS, 70 percent in JAMA, 56 percent in **Psychiatric News**, and 0.8 percent in the **American Journal of Nursing**. The major content categories in the **American Journal of Nursing** were recruiting, books and film, and clothing.

The main difference between Tables 1 and 3 is in recruiting and drug ads. Recruiting ads tend to be small and numerous, and therefore have greater prominence in Table 1 (number of advertisements) while drug ads tend to be long, some of them running three to four pages, thus giving them greater prominence in Table 3 (amount of space).

TABLE 3
Percentage of Advertising Space Devoted to Each Content Category

Content	Journal				
	AJN	AJM	JAMA	MAHS	PN
Prescription drugs	1	87	70	86	56
Nonprescription drugs	4	2	5	1	0
External medications	2	0	0	7	0
Treatment apparatus	3	1	0	2	1
Dietary	1	0	1	1	0
Lab and hospital equipment	3	1	1	0	1
Clothing	7	0	0	0	0
Seminars, workshops	3	1	1	0	19
Books, films	16	6	2	1	4
Job recruiting, availability	46	0	2	0	3
Classified section	12	0	19	0	13
Other	2	0	0	2	3

Cost estimates. In response to our request for advertising prices, four of the five journals included a recent issue along with the rate schedule.² The issue provided by the journal was used in computing advertising expenditures. Not only was this readily available for detailed analysis, but presumably it was an issue that the journal itself felt to be representative. In the case of the fifth journal, we randomly selected an issue from the same time period.

All costs were calculated as conservatively as possible from the figures supplied by the periodical. When there was any doubt as to the number of colors used, size, or a preferred location, the lower cost figure was used. Since we had no way of knowing how often an ad ran, we computed all costs as if the ad appeared in six successive issues. The resulting figure was approximately .5 percent lower than the single-issue cost and .5 percent higher than the 12-issue cost.

Despite repeated requests, we were unable to obtain the preferred rate schedule for the front and back covers of the **American Journal of Nursing**. This seemed a matter of editorial confusion more than anything else. The advertising department of the AJN kept telling us that they had already

sold the front inside covers for the coming year so did not bother supplying the information. We therefore decided to use the comparable preferred rates of **Nursing Outlook**, a sister publication of the AJN, also published by the AJN publishing company.

Table 4 shows that with the exception of the **American Journal of Nursing**, pharmaceutical houses contributed from two-thirds to nine-tenths of the advertising revenues of each journal. The largest source of advertising in the **American Journal of Nursing** came from within the profession itself, from recruiting and availability notices and the classified section. Advertisements for nonprescription drugs and external medications together amounted to slightly less than one-fifth of the advertising revenue of the AJN. Clothing ads and book and film ads contributed 10 and 15 percent respectively to its advertising revenues, **Medical Aspects of Human Sexuality** depended almost entirely on pharmaceutical houses for its advertising. Combined revenues from prescription and nonprescription drugs and external medications comprised 96 percent of advertising revenue for this journal.

At the bottom of Table 4 is a projection of annual revenues based on single-issue revenues multiplied by the number of issues per year. This is projection and should not be taken as an indication of actual monies. The single issue of the journal we examined may not have been fully representative of others published during the year. The projection is included because it is the only figure that takes into account the number of

* The response of all five advertising departments to our requests is interesting in itself. Accustomed to the policies of editorial departments, we enclosed stamped, self-addressed envelopes. We received replies from all the journals within a period of days. All arrived in large envelopes with personal letters, urging us to call collect if we wanted further information; four of the five included recent issues of the journal, and all returned unused our stamped self-addressed envelopes. We imagined wistfully how splendid it would be for authors if editorial departments responded so quickly, personally, and enthusiastically.

TABLE 4
Cost of Advertisements in Each Content Area

Content	Cost in thousands (one issue)					PN
	AJN	AJM	JAMA	MAHS		
Prescription drugs	5	107		129	214	27
Nonprescription drugs	17	5		7	3	-
External medication		26			13	
Treatment apparatus	14	-			6	
Dietary	2			4	4	
Lab and hospital equipment	11	2			-	1
Clothing	23	•				
Seminars, workshops	4			3		4
Books, films	36	24		3		3
Job recruiting, availability	80			6		3
Classified section	17			32	-	4
Total revenue	231	141		184	239	42
No. issues per year	12	12		52	12	24
Projected annual revenue"	2,771	1,695		9,569	2,871	1,012

* Single issue revenues x number of issues. This figure is a projection and should not be taken literally.

times the journal appears during the year. JAMA revenues exceed that of all the other periodicals combined, and three-quarters of this comes from pharmaceutical firms.

Discussion

The use of models in these journals is similar to that found by other investigators who made content analyses of medical advertising. Mant and Darroch (1975) found no ads portraying female physicians in their analysis of Australian medical journals, and Prather and Fidel I (1975) found no portrayals of women as physicians or men as nurses in ads in four American medical journals. These investigators also found, as we did, an almost equal division of male and female models used to portray patients. We did not, however, delve as deeply as these other investigators who found relationships between the gender of the patient and the type of drugs advertised.

The cost and space analyses raise a number of important questions that we are unable to answer. Our hope is that asking some of the questions will encourage responsible discussion. Is the present dependence of four of the five periodicals upon drug advertising a healthy situation for the medical profession? How does the reader react to the presence of so many drug advertisements interrupting nearly every article? Would it be more desirable to group the advertisements together rather

than scatter them throughout the articles? We were impressed by the comments made by Mant and Darroch (1975) that Australian librarians removed advertisements before binding medical journals. This would be a tremendous space saver, since anywhere from 35 percent to 75 percent of the title page space in the journals we studied was devoted to advertising. It is easier to realize economies in storing journals and retrieving articles when advertisements are grouped together rather than scattered in among the articles.

The absence of other kinds of advertising leaves some of these journals especially vulnerable to advertiser pressure, whether real or imagined. Anyone whose income derives from a single source is likely to feel vulnerable unless there is a long-term contractual arrangement that does not exist in this case. When so large a proportion of a periodical's revenue comes from a single source, the threat of a potential boycott must be seriously considered. Perhaps greater effort should be made by health periodicals to obtain advertising revenues from other sources. In the issues of JAMA we analyzed, there was not a single ad for automobiles, airplanes, boats, or other consumer items purchased by physicians. There are undoubtedly potential risks in seeking such commercial sponsorship, but this might serve as a counterweight to the present sponsorship by the pharmaceutical industry.

ADVERTISING IN HEALTH JOURNALS

REFERENCES

- GIGES, N.: Generic drug plan may aid majors. *Adv. Age* 44,8, December, 1973.
- HEMINSKI, E.: The quality of drug advertisements in Finnish medical journals. *Soc. Sci. and Med.* 7,71,1973.
- HESS, S. W.: Communicating with physicians. *J. Adv. Res.* 14,13,1974.
- LINN, L. S., and DAVIS, M. S.: Physicians' orientation toward the legitimacy of drug use and their preferred source of new drug information. *Soc. Sci. and Med.* 6,199,1972.
- MANT, A., and DARROCH, D. B.: Media images and medical images. *Soc. Sci. and Med.* 9,613,1975.
- PECK, C. C., and APPLEWHITE, L.: Medical literature symposium. *Pres. Cone. Int. Med.* 4,740,1971.
- PRATHER, J., and FIDELL, L. S.: Sex differences in the content and style of medical advertisements. *Soc. Sci. and Med.* 9,23,1975.
- SMITH, M. C.: Portrayal of the elderly in prescription drug advertising. *Geront.* 16,329,1976.
- SEIDENBERG, R.: Drug advertising and perception of mental illness. *Ment. Hyg.* 55,21,1971.
- SPAKE, A.: Prescription payola. *New Times* 3,36, July 26,1974.