Direct-to-Consumer Prescription Drug Advertising and the Public

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OBJECTIVE: Drug manufacturers are intensely promoting their products directly to consumers, but the impact has not been widely studied. Consumers’ awareness and understanding of, attitudes toward, and susceptibility to direct-to-consumer (DTC) drug advertising were examined.

DESIGN: Random-digit dialing telephone survey with a random household member selection procedure (completion and response rates, 58% and 69%, respectively).

SETTING: Respondents were interviewed while they were at their residences.

PARTICIPANTS: Complete data were obtained from 329 adults in Sacramento County, California.

MEASUREMENTS AND MAIN RESULTS: Outcome measures included awareness of advertisements for 10 selected drugs, misconceptions about DTC advertising, attitudes toward DTC ads, and behavioral responses to such promotions. The influence of demographic characteristics, health status, attitudes, beliefs, and media exposure on awareness and behaviors was examined. On average, respondents were aware of advertisements for 3.7 of the 10 drugs; awareness varied from 8% for Buspar (buspirone) to 72% for Claritin (loratadine). Awareness was associated with prescription drug use, media exposure, positive attitudes toward DTC advertising, poorer health, and insurance status. Substantial misconceptions were revealed; e.g., 43% thought that only “completely safe” drugs could be advertised. Direct-to-consumer advertisements had led one third of respondents to ask their physicians for drug information and one fifth to request a prescription.

CONCLUSIONS: Direct-to-consumer advertisements are reaching the public, but selectively so, and affecting their behaviors. Implications for public policy are examined.

KEY WORDS: prescription drugs; advertising; drug safety; drug promotion; drug regulation.

One of the triumphs of the biomedical revolution of the past 30 years is the development of a large and growing pharmacopoeia of prescription drugs. Used appropriately, these drugs enhance patients’ quality of life, improve functional capacity, and sometimes extend life. However, in the aggregate, prescription drugs represent a substantial health care expenditure. To ensure steady demand for their products, pharmaceutical manufacturers have traditionally deployed large armies of sales representatives marketing their wares to physicians. In recent years, managed care has altered the role of physicians as drug-purchasing agents. To control drug costs, managed care organizations and capitated physician groups have established drug formularies, utilization review systems, and pharmaceutical risk-sharing agreements (also see Wall Street Journal. May 22, 1997: A1, A11). As a result, the pharmaceutical industry has altered its marketing strategy by increasing its reliance on direct-to-consumer (DTC) advertising. Expenditures for DTC drug advertisements were $600 million in 1996 and by 2005 are projected to grow to as much as $7.5 billion (also see Wall Street Journal. July 1, 1997: B1, B6; and San Francisco Chronicle. March 12, 1998: E1, E12).

In light of these trends, it is important to understand the impact of DTC advertising on its target audience. A survey was developed to address four fundamental issues surrounding DTC advertising. First, is the public paying attention to these promotions? If these messages receive little attention, then oft-voiced concerns about their accuracy and effects can be allayed. Ad awareness was expected to be higher among individuals who had greater media exposure, rated their health more poorly, had been diagnosed with medical conditions addressed in current advertisements, were covered by a health plan that could help to pay for these drugs, and were more educated and thus better equipped to process such information. Second, we predicted that consumers would be more likely to attend to and be influenced by these promotions if they falsely assume that DTC advertisements are subjected to extensive regulatory preapproval. Third, we examined people’s approval of DTC advertising. Finally, we studied how people respond to such advertising. Are they reading these advertisements and consulting their physicians about advertised drugs? We expected to find greater influence among those respondents who were more aware of these advertisements, had more faith in their regulation, were regular users of prescription drugs, and held positive attitudes toward DTC advertising.

METHODS

Sampling Procedure

Our sample, drawn from Sacramento County, was generated using a telephone survey strategy based on...
random digit dialing of computer-generated numbers. During the spring of 1998, five trained assistants completed a total of 329 interviews. The supervisor made random callbacks to validate calls. No attempt was made to conduct an interview when calls were to nonresidential quarters or to households in which only a foreign language was spoken. The Hagen-Collier respondent selection procedure was used to select randomly a member from each household for inclusion in the study. The targeted individual from each household was considered unreachable after six unsuccessful calls. The response rate was 69% for households for which contact with the eligible party was made (completions/all eligibles was 58%).

**Questionnaire**

The survey typically took 8 to 10 minutes to complete. The questionnaire, which was pretested prior to final use and is available from the authors, was organized around the six sections outlined below. Of necessity, our measures were kept brief to maintain a reasonable interview length.

**Ad Awareness.** Respondents indicated whether or not they had seen an advertisement for each of 10 drugs that were being advertised at the time of the survey: Accolate (zafirlukast); Buspar (buspirone); Claritin (loratadine); Fosamax (alendronate); Glucophage (metformin); Imitrex (sumatriptan); Pravachol (pravastatin); Prilosec (omeprazole); Prozac (fluoxetine); and Sporanox (itraconazole). Response categories were no, have not seen advertisement; yes, have seen advertisement; and unsure. These drugs were selected from among the drugs being advertised to represent a wide range of medical conditions. In addition, one bogus drug, "Influgone," an alleged treatment for influenza, was included as a check on respondent deception. Interviewers stressed that they were asking if respondents had seen an advertisement for each drug—not if they had heard of the drug itself. An Ad Awareness Index was created by summing for each respondent the number of drugs for which she or he reported having seen an advertisement.

**Faith in Regulation.** Four true/false statements about government oversight and regulation of DTC advertisements were included to assess respondents' confidence in consumer protections: “Drug companies must submit copies of all prescription drug ads to the federal government for approval before those ads are used.” “Only prescription drugs that have been found to be completely safe can be advertised in the United States.” “Only prescription drugs that have been found to be extremely effective can be advertised in the United States,” and “The advertising of prescription drugs that have serious side effects has already been banned in the United States.” The correct answer to all four statements is “false.” A Faith in Regulation Scale was computed by counting across the four belief statements the number judged (incorrectly) by the respondent to be true. This measure thus had a range of 0 (no misconceptions) to 4 (most uninformed about DTC advertising regulation); its α reliability was .53.

**Attitude Toward Direct-to-Consumer Advertising.** Four items were included to gauge each respondent’s attitude toward DTC advertising: “Prescription drug ads provide consumers with valuable information about medical treatments.” “Most prescription drug ads are careful to describe both the risks and the benefits of these drugs.” “Most prescription drug ads are deceptive,” and “I disapprove of prescription drug advertising.” Response categories were strongly agree, agree, unsure, disagree, and strongly disagree. A confirmatory factor analysis showed these items to constitute a unidimensional measure; an attitude score was thus computed by averaging across the items, after reverse-scoring the two positively worded statements. This scale had a range of 1 (most negative attitude) to 5 (most positive) and an α reliability of .74. Although a reliability of .80 is generally considered acceptable, smaller values are reasonable for short instruments and instruments composed of dichotomous measures.

**Past Influence.** Five questions assessed past behavioral responses to DTC advertisements. Respondents indicated if they had ever, as a result of seeing such an advertisement, done the following: (a) asked their doctor for a prescription; (b) asked their doctor for more information about the advertised drug; (c) carefully read, from beginning to end, a DTC advertisement; (d) clipped a DTC advertisement for later reference; and (e) called a toll-free number given in an advertisement to obtain additional information. A factor analysis revealed that the first four of these five items comprised a unidimensional scale. A Past Influence Index was created by counting the number of affirmative responses to the items labeled as a through d above, creating a measure with a range of 0 to 4, with higher scores indicating more past influence (α = .63).

**Health Care Access, Health Status, and Medical Conditions.** Respondents indicated if they were covered by a health care plan at the time of the survey and, if insured, how often they thought their plan would help to pay for their prescriptions. A question was also included to assess continuity of care, with continuity assumed to be present for the respondent who received most care from the same doctor or doctors. Each respondent was asked if she or he had ever been diagnosed with the medical conditions for which the 10 drugs included in the awareness section were advertised as treatments: asthma (Accolate); anxiety, “nerves,” or panic attacks (Buspar); seasonal allergies (Claritin); osteoporosis (Fosamax, asked of female respondents only); diabetes (Glucophage); migraine headaches (Imitrex); high cholesterol level (Pravachol); severe heartburn (Prilosec); depression lasting at least 2 weeks (Prozac); and toenail fungus (Sporanox). Also administered was the 5-item General Health Perceptions subscale of the 36-Item Short Form (SF-36), which was scored based on the