

Direct-to-Consumer Drug Advertisements on Network Television: An Exploration of Quantity, Frequency, and Placement

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Prescription and over-the-counter (OTC) drug advertisements that appear on television are among the most common forms of health communication reaching the U.S. public, but no studies to date have explored the quantity, frequency, or placement of these ads on television. We explored these questions by recording all programs and advertisements that appeared on network television in a southeastern city during a selected week in the summer of 2001 and coding each prescription and OTC drug ad for its frequency, length, and placement by time of day and television program genre. A total of 18,906 ads appeared in the 504-hour sample, including 907 OTC drug ads (4.8%) and 428 prescription (Rx) drug ads (2.3%), which together occupied about 8% of all commercial airtime. Although OTC drug ads were more common, Rx drug ads on average were significantly longer. Direct-to-consumer drug ads appeared most frequently during news programs and soap operas and during the middle-afternoon and early-evening hours. Overall, we found that direct-to-consumer drug advertisements occupy a large percentage of network television commercial advertising and, based on time and program placement, many ads may be targeted specifically at women and older viewers. Our findings suggest that Americans who watch average amounts of television may be exposed to more than 30 hours of direct-to-consumer drug advertisements each year, far surpassing their exposure to other forms of health communication.

Introduction

Ask almost any American to name a health communication message they have received recently and they are likely to mention a drug advertisement on television. Products like the “purple pill” and slogans like “Just one and heartburn’s done” have become as well known as the marketing slogans for popular soft drinks, alcoholic beverages, and fast food restaurants. This increase in the public’s awareness of medications is a result of increased advertising by pharmaceutical companies.

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In 1997, the Food and Drug Administration issued new guidelines that allowed pharmaceutical companies to advertise Rx drugs on television using specific drug names and the conditions they treat, as well as more flexibility in providing information about the risks of drugs compared with print ads (Center for Drug Evaluation and Research, 2001). As a result, from 1996 to 2000 annual spending on direct-to-consumer advertising of prescription drugs more than tripled to \$2.5 billion, with the largest percentage increase committed to spending on television advertising (Rosenthal, Berndt, Donohue, Frank, & Epstein, 2002).

There are generally two schools of thought regarding the effects of direct-to-consumer drug advertising. Proponents of direct-to-consumer ads assert that pharmaceutical companies are providing a service for patients and the medical community by creating more informed consumers who can play a more active role in their own health care decision making. For example, an industry supporter stated the purpose of direct-to-consumer drug ads is “to encourage patients to talk to their physicians about their medical conditions and treatment options” (Holmer, 2002, p. 527). Opponents of direct-to-consumer ads counter that some ads are misleading and many are overly emotional in content. One critic, for example, described Rx drug ads as “pseudoeducational campaigns designed, first and foremost, to promote drugs” (Wolfe, 2002, p. 526). Opponents also argue that these ads are partly responsible for the increase in health costs over the past decade. A study by the National Institute for Health Care Management Research and Educational Foundation found that increased sales of the 50 most advertised drugs accounted for 47.8% of the \$20.8 billion rise in retail spending on pharmaceuticals from 1999 to 2000 (Findlay, 2001). In New Zealand, the only country other than the United States to allow direct-to-consumer drug ads, the Minister of Health has presented evidence that direct-to-consumer advertising adds to pharmaceutical costs (Coney, 2002).

From a health communication perspective, direct-to-consumer drug ads may be useful for increasing awareness and knowledge among the public of specific conditions and available treatments, but they also may lead to inaccurate self-diagnoses or incorrect perceptions of illness risk or treatment efficacy. These concerns are magnified especially among receivers who may not fully understand or correctly apply the content of the advertisement because they lack adequate levels of health literacy. Although direct-to-consumer advertising seems ubiquitous, it is important to document how many ads appear within various media outlets and whether any patterns emerge. This information can establish a baseline for future research and also can educate physicians and other health care professionals about the “dose” of exposure to direct-to-consumer drug ads that their patients are likely to experience. By knowing the dose and pattern of exposure, practitioners can be better prepared to provide care and discuss medication-related treatment options.

Limited research has been conducted to date on televised direct-to-consumer Rx and OTC drug advertisements. Although recent studies have explored the cost of such advertising (Kreling, Mott, Wiederholt, Lundy, & Levitt, 2001; Rosenthal et al., 2002), no studies to our knowledge have sought to examine the direct-to-consumer ads themselves to identify and explore when, where, and how they appear on television. We conducted this descriptive study, therefore, to determine the actual and relative frequency, time, and placement of Rx and OTC drug advertisements appearing in a selected week of major network television.

Methods

Data Collection and Coding

For one week in the summer of 2001, we videotaped all of the television programs and commercial advertisements that were broadcast on three major networks in a

metropolitan southeastern city. Taping began at midnight on a Sunday and ended at midnight the following Saturday, totaling more than 500 hours of programs and commercials.

We systematically reviewed each videotape and recorded the name, network, and airtime of each television program and the product or promotion, length in seconds, and network of each advertisement. These data were reviewed for accuracy and manually entered into a spreadsheet. Double entry of a 10% sample of the data revealed data-entry accuracy exceeding 99%.

Using two independent coders, we assigned each television program and each commercial advertisement to program genre and product categories, respectively. Television programs were assigned to one of 16 different genres based on categories developed in previous media-use research (Roberts, Foehr, Rideout, & Brodie, 1999) and advertisements were assigned to one of 18 product categories. Initial inter-rater agreement was very good for the television program coding ($\kappa = .94$) and excellent for the advertisement coding ($\kappa = .99$). Agreements were resolved by discussion among the coders until consensus was achieved. We also determined the average monthly cost of each Rx drug using pricing from an on-line pharmacy (Drugstore.com, 2002) and recoded these costs into three ordered categories: low (up to \$100 per month), medium (from \$100 to \$200 per month), and high (more than \$200 per month).

Analysis

We calculated the average length of each category of advertisement and compared the categories by frequency and advertisement length. We also compared category of drug advertisements, Rx drug type, and Rx drug cost by network, airtime, and television program genre. We used chi-square and ANOVA tests for each two-tailed comparison and judged results to be significant at $p < .05$.

Results

Over the course of the week, 18,906 advertisements appeared in the 504-hour sample of network television. There were 907 advertisements for OTC drugs and 428 advertisements for Rx drugs, representing 4.8% and 2.3% of all ads, respectively.

Although OTC drugs ads were more common, Rx drug ads were significantly longer. The mean length of OTC drug ads was 21.7 seconds (S.D. = 8.2) compared with 43.9 seconds (S.D. = 17.3) for Rx drug ads ($F = 873.3$, $p < .001$). Nearly half of the Rx ads were more than 1 minute in length, compared with fewer than 1% of the OTC ads. (See Figure 1.) The OTC and Rx ads occupied 331 and 311 minutes, respectively, during the sampled week. Taken together, these ads occupied more than 8% of all commercial airtime. Over-the-counter and Rx ads appeared more frequently and occupied more airtime than ads for many other product types. (See Table 1.)

Retail cost of the Rx drug advertised directly correlated with ad length as well ($P < .001$). The mean length of low-cost Rx drugs was 42.1 seconds (S.D. = 15.9), the mean length for medium-cost drugs was 47.9 seconds (S.D. = 19.1), and the length for all of the high-cost drugs was 60.0 seconds.

Over the course of the sample week, direct-to-consumer ads for Rx and OTC drugs were most commonly aired during middle-afternoon and early-evening hours. (See Figure 2.) The highest peaks came between 2:00 and 4:00 PM when an average of 26.1 minutes of OTC ads and 21.8 minutes of Rx ads aired on each network, and between 6:00 and 8:00 PM when an average of 16.9 minutes of OTC ads and 18.1 minutes of Rx ads

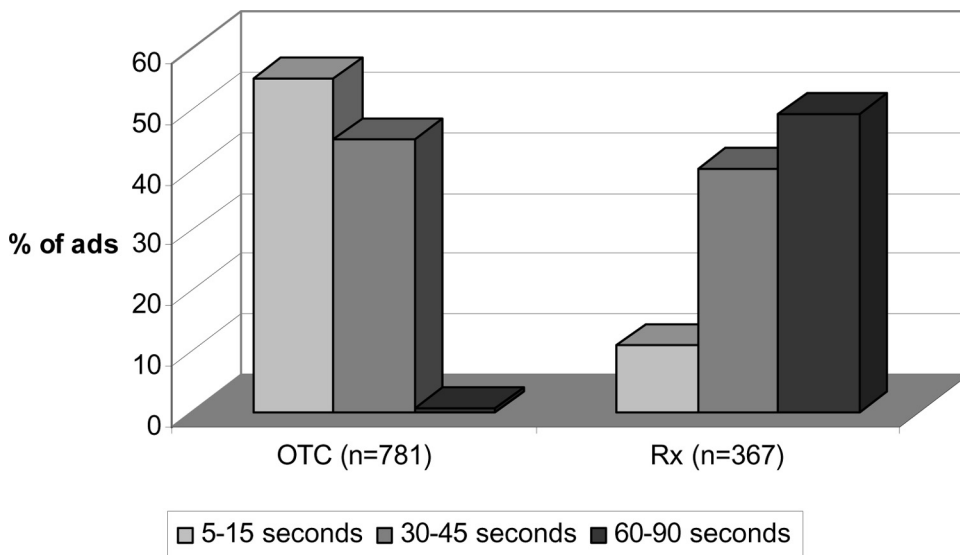


FIGURE 1 Frequency and length of over-the-counter (OTC) and prescription (Rx) advertisements.

aired on each network. The highest number of OTC and Rx ads was aired on Tuesday (18.1% and 18.3%), while the lowest number of OTC ads aired Sunday (7.8%) and the lowest number of Rx ads aired Saturday (6.5%).

Direct-to-consumer drug advertising also varied significantly in its placement within different genres of televised programming ($\chi^2 = 50.4, p < .001$). The most common program genre for direct-to-consumer drug ads was news programs, where 32% of all OTC ads and 41.4% of all Rx ads appeared. The second most common program genre was soap operas, which contained 23.6% of all OTC ads and 27% of all Rx ads. Together, these two program types contained nearly 60% of all direct-to-consumer drug advertising.

Discussion

The results of this exploratory study suggest that direct-to-consumer advertisements of OTC and Prescription drugs appear with great frequency on network television and that

TABLE 1 Frequency and Length of Selected Televised Commercial Advertisement Categories

Advertisement category	No. of ads	Total airtime (mins.)
Alcoholic beverages	179	77.4
Beauty aids and products	523	203.3
Food and beverages	1,855	730.9
Health aids and hygiene	1,032	400.7
Health providers and procedures	214	109.3
Lawyers and legal services	227	97.2
Over-the-counter (OTC) medications	907	330.8
Prescription (Rx) medications	428	311.4
Public service advertisements	285	137.3

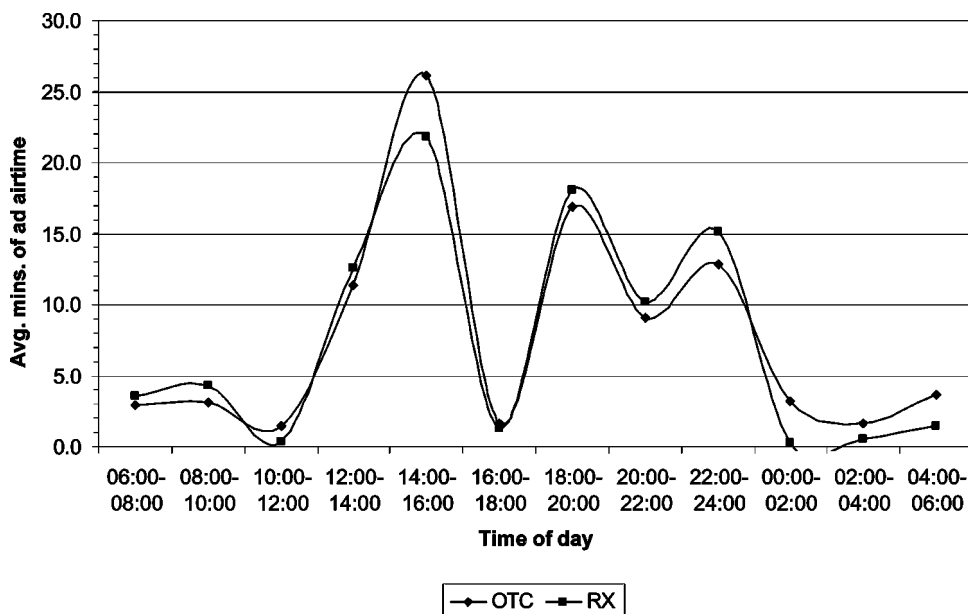


FIGURE 2 Minutes of over-the-counter (OTC) and prescription (Rx) ads on network television by time of day. (Note: Time of day is presented in 2-hour blocks beginning at 6:00 AM and ending at 6:00 AM.)

OTC and Rx drug ads occupy similar amounts of commercial airtime. In addition, Rx ads appeared on the networks most commonly during the middle afternoon and early evening hours, often within soap operas and news programs. Based on demographic variations in network television viewing patterns (Nielsen Media Research, 2002), our findings suggest that many Rx ads are being targeted primarily at viewers that are older or female or both. The finding that women are a primary target market for direct-to-consumer Rx advertising is consistent with findings from a study of direct-to-consumer Rx ads that appeared in popular magazines (Woloshin, Schwartz, Tremmel, & Welch, 2001). Targeting seniors and women is not surprising as seniors are the largest consumers of OTC and Rx drugs (Families USA, 2000) and women often are the primary decision makers on health care issues and medication purchases (U.S. Department of Labor, 2002). As pharmaceutical advertisers and marketers continue to refine their techniques, their ability to market specific drugs to particular audience segments is likely to increase.

Although not measured in this study, previous studies have demonstrated that direct-to-consumer drug advertisements affect consumer behavior (Kaiser Family Foundation, 2002; *Prevention Magazine*, 1998). Furthermore, physicians' attitudes and prescribing patterns have been found to be influenced both by direct-to-consumer advertisements (Wilkes, Bell, & Kravitz, 2000) and direct-to-physician marketing, for which the pharmaceutical industry spent nearly \$13 billion in 2000 (Rosenthal et al., 2002).

Our study has several important limitations. First, we analyzed only televised advertisements and we limited our sample to one selected week of television aired on three broadcast networks in one major city. Second, although randomly selecting a week of programming is the preferred method of conducting analysis of television content, many previous analyses of television content have utilized convenience samples (Smith et al., 1998). Because we lacked the capability to capture a random sample of televised content, we instead opted to select our sample television week by convenience. Finally,

we did not examine the content or accuracy of direct-to-consumer ads, nor did we explore viewers' interpretations or perceptions of the ads. Future research on direct-to-consumer drug ads should address these important issues as a means of better understanding the impact of these ads on receivers.

Given that the average American watches 4 hours and 22 minutes of television each day (Nielsen Media Research, 2002), our results suggest that an average television viewer who watched only the three networks we taped during our selected week would have been exposed to almost 40 minutes of direct-to-consumer OTC and Rx advertising that week, or more than 5-and-a-half minutes per day on average. If one considers this amount in contrast to the 15 minutes that the average American spends each year with her primary care physician (U.S. Agency for Health Care Policy and Research, 2002), the average viewer may have seen more than 100 minutes of direct-to-consumer drug advertising in the year before her visit for every minute she spends with her doctor. This amount translates into viewing more than 30 hours of direct-to-consumer drug ads per year.

Consumers are likely to receive an increasing portion of their information about conditions and treatment from television ads with an uncertain impact on the demand for advertised medications, health care spending, and health outcomes. Further research is needed to define the true scope and impact of direct-to-consumer advertising.

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