

# Creating Demand for Prescription Drugs: A Content Analysis of Television Direct-to-Consumer Advertising

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## ABSTRACT

**PURPOSE** American television viewers see as many as 16 hours of prescription drug advertisements (ads) each year, yet no research has examined how television ads attempt to influence consumers. This information is important, because ads may not meet their educational potential, possibly prompting consumers to request prescriptions that are clinically inappropriate or more expensive than equally effective alternatives.

**METHODS** We coded ads shown during evening news and prime time hours for factual claims they make about the target condition, how they attempt to appeal to consumers, and how they portray the medication and lifestyle behaviors in the lives of ad characters.

**RESULTS** Most ads (82%) made some factual claims and made rational arguments (86%) for product use, but few described condition causes (26%), risk factors (26%), or prevalence (25%). Emotional appeals were almost universal (95%). No ads mentioned lifestyle change as an alternative to products, though some (19%) portrayed it as an adjunct to medication. Some ads (18%) portrayed lifestyle changes as insufficient for controlling a condition. The ads often framed medication use in terms of losing (58%) and regaining control (85%) over some aspect of life and as engendering social approval (78%). Products were frequently (58%) portrayed as a medical breakthrough.

**CONCLUSIONS** Despite claims that ads serve an educational purpose, they provide limited information about the causes of a disease or who may be at risk; they show characters that have lost control over their social, emotional, or physical lives without the medication; and they minimize the value of health promotion through lifestyle changes. The ads have limited educational value and may oversell the benefits of drugs in ways that might conflict with promoting population health.

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## INTRODUCTION

The United States and New Zealand are the only developed countries that permit direct-to-consumer advertising (DTCA) of prescription drugs. Average American television viewers see as many as 16 hours of prescription drug advertisements (ads) per year, far exceeding the average time spent with a primary care physician.<sup>1</sup> Since the Food and Drug Administration (FDA) relaxed DTCA regulations in 1997, a polarized debate around the practice has ensued.

Opponents argue that ads mislead consumers and prompt requests for products that are unneeded or more expensive than other equally effective drugs or nonpharmacologic treatment options.<sup>2-4</sup> Proponents counter that DTCA educates people about health conditions and available treatments and empowers them to become more active participants in their own care, thereby strengthening the health care system.<sup>5-7</sup>

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**CONCLUSIONS** Despite claims that ads serve an educational purpose, they provide limited information about the causes of a disease or who may be at risk; they show characters that have lost control over their social, emotional, or physical lives without the medication; and they minimize the value of health promotion through lifestyle changes. The ads have limited educational value and may oversell the benefits of drugs in ways that might conflict with promoting population health.

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## INTRODUCTION

The United States and New Zealand are the only developed countries that permit direct-to-consumer advertising (DTCA) of prescription drugs. Average American television viewers see as many as 16 hours of prescription drug advertisements (ads) per year, far exceeding the average time spent with a primary care physician.<sup>1</sup> Since the Food and Drug Administration (FDA) relaxed DTCA regulations in 1997, a polarized debate around the practice has ensued.

Opponents argue that ads mislead consumers and prompt requests for products that are unneeded or more expensive than other equally effective drugs or nonpharmacologic treatment options.<sup>2-4</sup> Proponents counter that DTCA educates people about health conditions and available treatments and empowers them to become more active participants in their own care, thereby strengthening the health care system.<sup>5-7</sup>

Television advertising now comprises most of the consumer-directed prescription pharmaceutical marketing expenditures.<sup>8</sup> Previous research has examined print ads,<sup>9-13</sup> but unlike print ads, television ads combine visual imagery, music, and spoken words to create complex stories that may provide more information and appeal to a wider range of consumer emotions. To date, no one has analyzed systematically what television ads claim about health conditions, how they attempt to appeal to consumers, or how they portray the role of lifestyle behaviors and medication in achieving good health. These questions are critically important given evidence that DTCA prompts consumers to request prescriptions for advertised products from their physicians,<sup>14,15</sup> and that many of those requests are fulfilled despite being judged clinically inappropriate.<sup>16</sup>

The goal of our study was to analyze the content of television DTCA messages to lay the foundation for future studies that examine the consequences of DTCA exposure. Little is known about how DTCA affects people's health-related beliefs and behaviors beyond prescription requests, even though television pharmaceutical ads are among the most common forms of mediated health communication in the United States. Content analysis is a well-established method of inquiry for generating research questions and hypotheses for future experimental and observational studies that examine the effects of advertising on consumers' beliefs and behaviors.<sup>17,18</sup>

## METHODS

### Sampling Strategy

We focused on ads that have the largest audiences, drawing a sample from peak television viewing times (prime time, 8:00-11:00 PM) and the evening news on channels with the most viewers (ABC, CBS, NBC, and Fox).<sup>19</sup> We recorded programming for 4 consecutive weeks (June 30, 2004, to July 27, 2004), randomly selecting a different channel each day but never recording the same channel on 2 consecutive days. Each day of the week was represented for each network.

The FDA regulations distinguish between product claim ads and reminder ads. Product claim ads must include the name and indication of the drug, as well as a major statement of product risks, and they must direct consumers to a detailed summary of product risks and benefits accessible through a toll-free telephone number, an Internet site, or a concurrent print ad. We limited our analysis to television ads, rather than Internet, print, or telephone sources, because television ads reach a wider audience, and people might seek further information only if the ads are sufficiently compelling. Reminder ads are shorter and can mention

the product name, but may not discuss indications, efficacy, or dosage recommendations.<sup>9-13,20</sup> Our programming sample captured a total 103 ads comprising 31 unique product claim ads and 7 unique reminder ads, which provided the basis for our analysis (Table 1).

For each reminder ad we also had a corresponding product claim ad. We included reminder ads in our sample to describe how the messages and themes being communicated were affected by the shorter length of these ads. Our sample captured ads for 7 of the 10 top-selling prescription drugs in 2004.<sup>21</sup>

### Ad Coding

We used 2 strategies to code the ads. First, to code the ads for the types of factual claims about the target condition (excluding product risk information) and the types of appeals to viewers, we drew on categories previously developed for print ads.<sup>9,11</sup> The specific factual claim categories we coded are shown in Table 2. Proponents of DTCA have argued that ads serve in part to educate the public about diseases. Hence, our goal was to enumerate the frequency with which television ads made factual claims, regardless of the accuracy of this information. We drew on categories previously applied to print ads to code how the ads attempted to appeal to viewers with (1) rational appeals—providing information about product use, features, or comparison with similar products; (2) positive emotional appeals—evoking favorable affect, for example, by showing happiness; (3) negative emotional appeals—evoking negative affect by portraying fear, regret, or other negative emotions; (4) humor appeals—using puns, jokes, or satire; (5) fantasy appeals—depicting an unrealistic or surreal scene; (6) sex appeals—showing characters in an intimate encounter, scantily clad, or using provocative gestures; and (7) nostalgic appeals—using images from an earlier time, or black-and-white or sepia tone visuals.<sup>11</sup>

Second, we developed inductive codes by approaching our sample with 2 research questions: (1) How do the ads portray the role of medication in the lives of characters? and (2) How do the ads portray the role of healthy lifestyle behavior in the lives of characters? We used grounded theory coding procedures to inductively develop common thematic categories and refine their definitions and properties.<sup>22,23</sup> Because our study was descriptive and did not aim to produce a theory, we limited our use of grounded theory procedures to open and axial coding. Open coding refers to the analytical process of examining, comparing, and categorizing qualitative data to develop thematic concepts. Axial coding involves coding similar data sequences to foster connections between emerging thematic concepts. Both coding procedures permit a thematic analysis of content data in mixed methods research projects.<sup>22-24</sup> The first

**Table 1. Drug Advertisements Captured in Sample**

Brand name	Generic Product Name	Manufacturer	Advertised Indication
Actonel*	Risedronate	Procter & Gamble, Cincinnati, Ohio	Osteoporosis
Allegra*	Fexofenodine	Aventis, Bridgewater, NJ	Allergy
Ambien†	Zolpidem	Sanofi-Synthelabo, New York, NY	Insomnia
Celebrex†	Celecoxib	Pfizer, New York, NY	Osteoarthritis, rheumatoid arthritis
Cialis†	Tadalafil	Lilly ICOS, Indianapolis, Ind	Erectile dysfunction
Crestor*	Rosuvastatin	AstraZeneca, Wilmington, Del	Hypercholesterolemia
Detrol LA*	Tolterodine	Pfizer, New York, NY	Overactive bladder
Enbrel*	Etanercept	Immunex, Thousand Oaks, Calif	Rheumatoid arthritis
Fosamax*	Alendronate	Merck, Whitehouse Station, NJ	Osteoporosis
Lamisil*	Terbinafine	Novartis, East Hanover, NJ	Onychomycosis
Levitra*	Vardenafil	Bayer, West Haven, Conn	Erectile dysfunction
Lipitor†	Atorvastatin	Pfizer, New York, NY	Hypercholesterolemia
Nexium*	Esomeprazole	AstraZeneca, Wilmington, Del	Gastroesophageal reflux disease
Diovan**†	Valsartan	Novartis, East Hanover, NJ	Hypertension
Diovan HCT	Valsartan & HCT	Novartis, East Hanover, NJ	Hypertension
Lotrel	Amlodipine & Benazepril	Novartis, East Hanover, NJ	Hypertension
Plavix*	Clopidogrel	Bristol-Myers Squibb, Princeton, NJ	Acute coronary syndrome
Prevacid†	Lansoprazole	TAP, Lake Forest, Ill	Gastroesophageal reflux disease
Procrit†	Epoetin Alfa	Amgen, Thousand Oaks, Calif	Chemotherapy-related anemia
Singulair*	Montelukast	Merck, Whitehouse Station, NJ	Allergy
Valtrex†	Valacyclovir	GlaxoSmithKline, Middlesex, UK	Genital herpes
Zelnorm*	Tegaserod	Novartis, East Hanover, NJ	Irritable bowel syndrome with constipation
Zocor*	Simvastatin	Merck, Whitehouse Station, NJ	Hypercholesterolemia
Zoloft*	Sertraline	Pfizer, New York, NY	Depression, social anxiety disorder

\* Product claim advertisement only.

† Product claim and reminder advertisement.

‡ Advertisement promoted unnamed products that were identified on corresponding Web site.

author (DLF) led the analytical process in frequent consultation with the coauthors, a team whose disciplinary backgrounds included clinical psychology (DLF), sociology (PMK), communication (RCH), medicine (PFC) and anthropology (FKB). The authors discussed the thematic concepts that emerged when viewing a sample of the ads. The defining properties of the concepts were gradually refined to create specific coding categories, whereupon 2 bachelor's level research assistants were trained to code all of the ads independently.

### Coding Reliability and Frequency Presentation

We had good aggregate interrater reliability for our coding categories, as indicated by  $\kappa$  values ranging from .76 to .88.<sup>25</sup> Coding disagreements between the research assistants were resolved through consensus. We report weighted frequencies that reflect the overall prevalence of the codes among the ads captured in the programming we recorded. The weights equal the total number of times each of the 38 ads was captured in our sample (mean = 2.7, SD = 2.3, range 1-12). Thus, ads that were captured more often in our sample had a proportionately greater impact on the prevalence of different coding categories. The unweighted

data (not shown) reflected similar frequencies and patterns of the codes.

## RESULTS

### Ad Length and Story Structure

The average ad length was 44.9 seconds (SD 18.6 seconds, range 14-62 seconds); product claim ads (mean = 51.8, SD 12.7) were significantly longer than reminder ads (mean = 14.4, SD 0.5; Mann-Whitney  $U = 5.0$ ;  $P < .001$ ). We identified 3 story structures for the ads. Almost one half (44.7%) of the ads showed characters before and after taking the product. A smaller proportion (39.5%) showed characters only after taking the product, and a minority showed characters only before taking the product (7.9%). Three ads (7.9%) did not use any characters or did not clearly depict whether characters had taken the product.

### Factual Claims About the Target Condition

Because reminder ads cannot legally present factual information, we focused on product claim ads. Most of the ads made some factual claims about the target condition of the product, typically by mentioning condition

symptoms (Table 2). More than one half the ads made a claim about the biological nature or mechanism of the disease, but only 26% made claims about risk factors or causes of the condition. Almost 25% made claims about the population prevalence of the condition, but among these ads, only 25% gave specific information (eg, 1 in 9). The remaining ads used vague terms, such as “millions.” Only 8% of the ads identified specific subpopulations at increased risk of having the condition. Consistent with FDA regulations, all product claim ads, but none of the reminder ads, included information about major risks and side-effects. This information was always provided in the latter part of the ad, but never at the end, always leaving the final frames for a promotional message.

### Appeals

Table 2 shows that all product claim ads used rational appeals, such as describing the product indication. Consistent with FDA regulations, reminder ads never used rational appeals. Almost 95% of product claim ads and 100% of the reminder ads used positive emotional appeals, often by depicting a happy character after taking a product. Sixty-nine percent of the ads used negative emotional appeals, such as showing a character in a fearful state before using the product. Almost one third of the ads used humor to appeal to viewers, sometimes by making fun of the character before taking the product.

### Lifestyle Portrayals

Our inductive coding procedures identified 5 themes related to lifestyle portrayals of the ad characters (Table 2). Twenty-six percent of the ads suggested that the target condition may interfere with healthy or recreational activities, and 56% of the ads suggested that the product enables healthy or recreational activities. We coded the physical activities portrayed in the ads, distinguishing among mild, moderate, and vigorous physical activity (results not tabled). More than one half of the ads (52.7%) showed the primary character engaging in some physical activity. Eighty percent of these ads showed characters engaging in moderate or vigorous physical activity.

**Table 2. Proportion of Advertisements That Present Factual Claims, Appeals, Lifestyle, and Medication Themes**

Categories of Content	Weighted Percentages		
	All Ads	Product Claim Ads	Reminder Ads
<b>Factual claims*</b>			
Any factual information (eg, symptoms)	–	82.0	–
Biological nature or mechanism of disease	–	53.9	–
Risk factors or cause of condition	–	25.8	–
Prevalence of condition	–	24.7	–
Subpopulation at risk of the condition		7.9	
<b>Appeals</b>			
Rational	86.4	100.0	0.0
Positive emotional	95.1	94.4	100.0
Negative emotional	68.9	75.3	28.6
Humor	32.0	36.0	7.1
Fantasy	20.4	22.5	7.1
Sex	5.8	4.5	14.3
Nostalgia	3.9	3.4	7.1
<b>Lifestyle portrayals</b>			
Condition interferes with healthy or recreational activities	26.2	30.3	0.0
Product enables healthy or recreational activities	56.3	56.2	57.1
Lifestyle change is alternative to product use	0.0	0.0	0.0
Lifestyle change is insufficient	18.4	21.3	0.0
Lifestyle change is adjunct to product	19.4	22.5	0.0
<b>Medication portrayals</b>			
Loss of control caused by condition	58.3	67.4	0.0
Regaining control as result of product use	85.4	88.8	64.3
Social approval as a result of product use	77.7	83.1	42.9
Distress caused by condition	47.6	53.9	7.1
Breakthrough	58.3	67.4	0.0
Endurance increased as a result of product use	17.5	12.4	50.0
Protection as a result of product use	9.7	11.2	0.0

Note: Total unweighted N = 38, product claim ads n = 31, reminder ads n = 7.

\* The Food and Drug Administration does not permit the presentation of factual information in reminder ads.

Several of the products advertised for our sample of ads target conditions (eg, hypercholesterolemia, insomnia, hypertension) that have nonpharmacological treatment alternatives which involve behavior change. None of these ads explicitly mentioned behavior changes as an alternative to the product. More than 18% of the ads suggested that lifestyle change is insufficient to manage the condition, implying that using the product was a superior alternative. Nineteen percent of the ads suggested that lifestyle change may be an adjunct to using the product.

### Medication Portrayals

We inductively identified 7 themes related to medication portrayals in the ads: (1) loss of control—the characters have lost control of some biological process, function, or ability as a result of their condition; (2)



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