

Direct-to-Consumer Advertising and its Utility in Health Care Decision Making: A Consumer Perspective

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The growth in direct-to-consumer advertising (DTCA) over the past two decades has facilitated the communication of prescription drug information directly to consumers. Data from a 1999 national survey are employed to determine the factors influencing consumers' opinions of the utility of DTC ads for health care decision making. We also analyze whether consumers use DTC ad information in health care decision making and who are the key drivers of such information utilization. The study results suggest that consumers have positive opinions of DTCA utility, varying across demographics and perceptions of certain advertisement features. Specifically, consumers value information about both risks and benefits, but the perception of risk information is more important in shaping opinions of ad utility than the perception of benefit information. Consumers still perceive, however that the quality of benefit information in DTC ads is better than that of risk information. Opinions about ad utility significantly influence whether information from DTC ads is used in health care decision making.

Introduction

Physicians serve an important role as prescribing authorities in consumers' health care decisions (Cutrer & Pleil, 1991). Consequently, they are the primary targets for the promotional efforts of pharmaceutical companies (Gonul, Carter, Petrova, & Srinivasan,

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2001). Over the past two decades however, with the health care environment in the United States witnessing the rapid growth of the managed care system and consumers becoming more medically sophisticated, manufacturers are employing innovative marketing strategies such as DTCA to boost product recognition and sales by directly targeting the end users of prescription drugs—consumers (Bell, Kravitz, & Wilkes, 1999; Perri, Shinde, & Banavali, 1999). Since its inception in the early 1980s, DTCA has witnessed tremendous growth in ad expenditures. Currently, spending on DTC campaigns across the pharmaceutical industry amounts to more than \$2.5 billion. The importance of DTCA in the promotional agenda of the pharmaceutical industry is evidenced by the fact that it accounts for 15% of the overall promotional budget (Brichacek & Sellers, 2001). In terms of its effectiveness for the pharmaceutical industry, research indicates that DTCA increases market share and drug sales (Basara, 1996). Despite its widespread presence across media channels and the resources expended on it, knowledge about the real impact that DTCA has on consumer health-related decision making remains limited.

Bell, Wilkes, and Kravitz (2000) report on the “educational” value of DTCA by analyzing the content of drug ads in magazines. They found that this form of promotion may serve to raise the awareness of consumers toward available therapeutic options. They imply that DTCA may be inadequate, however in educating consumers about specific drug information related to risks, warnings, and benefits. Gonul, Carter, and Wind (1999) report significant differences with regard to the perceived value of DTCA between consumers and physicians. Specifically, their results suggest that DTCA is perceived favorably among consumers in terms of the value it provides them, while physicians do not recognize the value of DTCA similarly. They suggest that DTCA may be effective, however in improving the interaction between patients and physicians. A recent review of data from different national consumer surveys by Calfee (2002) described the impact of DTCA on several issues such as physician prescribing and balanced presentation of drug risks and benefits. On the one hand, Calfee suggests that no additional restrictions be applied on the dissemination of drug information through this practice. Hoek and Gendall (2002) argue that the concerns about the ability of DTCA to effectively communicate drug risk information may be overemphasized. On the other hand, Coney (2002) posits that DTCA is unable to satisfactorily deliver “quality health information” that aids in health care decision making and may lead to unnecessary health care costs. Further, Lexchin and Mintzes (2002) argue against the value of DTCA information by referring to the growing incidence of violations of risk disclosure requirements by prescription drug ads. A study report published by the National Institute for Health Care Management (NIHCM) Foundation (2000) reports that DTCA is the most important contributor to increasing prescription drug expenditures. Results of a 1999 survey by the U.S. Food and Drug Administration (FDA, 2002) indicate that DTCA increases consumer awareness about therapeutic options and stimulates information search. The survey also finds that consumer attitudes toward DTCA are key drivers of information search.

Despite the abundance of published studies on DTCA, there remains limited knowledge about the impact of DTCA on consumer health care decision making. The first objective of this study is to determine if consumers perceive DTCA information to be useful for health care decision making. The second objective is to determine the key drivers of those perceptions. In other words, the second objective is concerned with explaining consumer perceptions of DTCA utility. The third objective is to determine if consumers utilize DTCA information in their health care decision making. In analyzing the third objective we are specifically interested in looking at the influence of consumers’ attitudes on their utilization of ad information for health care decision making. The third

objective goes beyond the first two in that the major focus is on retrospective behavior, rather than perception.

Literature Review

It has been argued that physicians traditionally have assumed a paternalistic role in discussions with patients about therapeutic options. Under this model, the patient delegates decision-making authority to the physician. Implicit assumptions in delegating this authority include the perception that the “physician knows best” and would be in the best position to make a therapeutic decision in the patient’s best medical interests (Gafni, Charles, & Whelan, 1998). Consequently, health care decision making revolves around the physician, and patient involvement in the process is limited to providing legal consent to the decision. Characteristic to this form of health care decision making is a unidirectional information flow from the physician to the patient. The exchange of information is limited to discussing symptoms with the patient and prescribing or recommending therapeutic options accordingly (Charles, Gafni, & Whelan, 2002). Since the physician is the sole decision maker in this particular process, manufacturers traditionally have promoted their products to physicians and have had minimal promotional communication with the end users of the product—the consumers. More recently, however, this traditional process of health care decision making has been criticized for ignoring the potential contribution that today’s more “medically sophisticated” consumers may make to the health care decision-making process.

The present study hypothesizes that DTCA is associated significantly with a shift from the traditional “paternalistic process” of health care decision making to a more “shared decision-making process.” The process of shared decision making is characterized by the equal involvement of the patient in the decision-making process. The information transfer in this process is bidirectional, involving both the physician education of the patient about the disease and therapeutic outcomes and the patient’s expression of therapeutic preferences (Charles et al., 2002). (Refer to Figure 1). In the course of this process, both physician and patient weigh the risks and benefits of the therapeutic options under consideration, and they reach a collaborative decision (Charles et al., 2002). This process may lead to increased patient satisfaction (due to the interaction between patient and physician), increased knowledge of the disease and therapeutic options, and better treatment outcomes such as compliance and adherence to drug dosage regimens.

Previous research in health care decision making has focused on the level of participation consumers exercise in choosing therapeutic options (e.g., choosing between mastectomy and breast conservation; Levy, Herbermann, Lee, Lippmann, & D’Angelo, 1989). There is evidence in the literature that consumers tend to entrust almost the entire health care decision-making process to their health care professionals (Gafni et al., 1998). Certain consumers, however may exhibit a need for greater involvement in the decision-making process. For example, patients in poorer health are more likely to be involved in decision making because they may experience a greater need to regain their health. Patients’ sociodemographic characteristics such as level of education, income, and racial group also may influence their participation in health care decision making (Guadagnoli & Ward, 1998). Overall, empirical research indicates that, despite consumers’ desire for greater information exchange with the health care provider, they remain hesitant to challenge their health care providers to seek such an information exchange (Levy, 1999). The growth in the number of products advertised directly to consumers especially since the relaxation of strict FDA guidelines in 1997 may encourage consumers to become more informed participants in the health care decision-making process. A study by

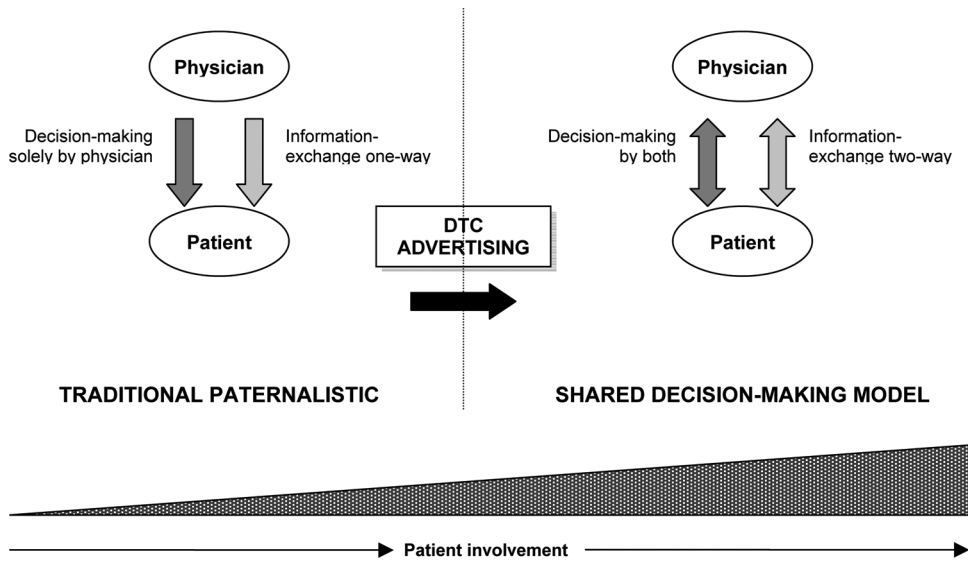


FIGURE 1 Schematic representation of the impact of direct-to-consumer advertising (DTCA) on a shift in decision-making from a paternalistic approach to a shared decision-making approach.

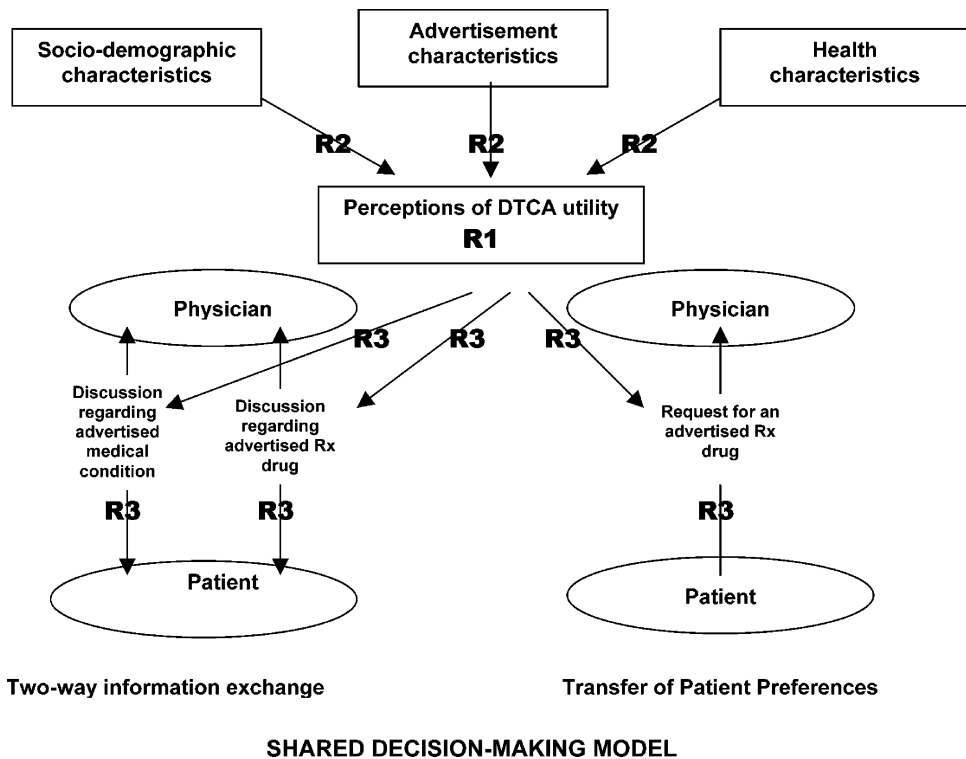


FIGURE 2 Schematic representation of research questions. (Note: R1 = Research Question 1, R2 = Research Question 2, R3 = Research Question 3).

Schulman (1979) revealed that patients with greater participation in decisions concerning therapeutic options had better adherence to treatment regimens and, consequently, more satisfactory health outcomes. There is limited knowledge, however, about whether DTCA specifically contributes, in any significant manner, to patient participation in the health care decision-making process.

In light of drug manufacturers' claims that DTCA promotes consumers' awareness about drugs and medical conditions and facilitates patient-physician discussion about therapeutic options, it is important to analyze the extent of consumers' actual utilization of information obtained from DTCA. The literature provides some evidence that consumers are increasingly aware of DTC-advertised drugs. Questions remain, however about whether such awareness leads to factual knowledge about the drug that can engender a more informed decision-making process. For instance, some consumer advocacy groups and physicians are concerned about the increasing expenditure on DTCA and the potential impact on drug prices. The present study is an exploratory analysis of the various factors that potentially may influence consumers' perceptions about the utility of DTC ads. Further, this study seeks to determine if consumers use information contained in drug ads in health care decision making. Moreover, we examine the influence of several factors, specifically attitudes toward DTCA, on the likelihood that information in the ad will be utilized in decision making.

Research Questions

Research Question 1: How do Consumers Perceive DTC Ads? Do Consumers Perceive DTCA Information to be Useful for Health Care Decision Making?

In other words, are consumers' overall evaluations positive or negative?

To some extent, consumers' demographic characteristics and health status may have an impact on their need for involvement in decision making (Guadagnoli & Ward, 1998). Prior research shows that women are more involved in health-related issues compared with males (Kahn, 2001). Taking into account the increasing utilization of prescription medications among the nation's elderly population (Tripp & Straub, 2001), this particular consumer segment may demonstrate an increased interest in obtaining health-related information. Although non-Caucasians generally are skeptical of health-related issues, they have an increased tendency to seek information from mass media (Bush, Smith, & Martin, 1999). Lesser-educated consumers have positive attitudes toward general information sought from the media (Williams & Hensel, 1995). Their ability to interpret and use information from drug ads, however may be limited. These sociodemographic variations in consumers' health-related attitudes might indicate the existence of potential differences in their opinions toward drug ad information and in their utilization of ad-related information for decision making. Consumers' health characteristics also may be important in how they react to DTCA. According to "selective attention" theory (Williams & Hensel, 1995) consumers in poorer health may react more favorably to information that may help them regain their health.

Consumer attitudes toward DTCA may vary as a function of level of exposure to such ads and information content in these ads (Perri & Nelson, 1987; Morris, Brinberg, Klimberg, Rivera, & Millstein, 1986). Furthermore, specific features of DTC ads such as the clarity of the ad also may significantly influence opinions of the utility of the ad since conveying drug information in a manner that is perceived by consumers to be clear and understandable may help them better comprehend the

information, thereby potentially affecting their opinion of ad utility. In attempting to analyze the effect of consumer demographics, health characteristics, and specific features of DTCA on consumers' opinions of ad utility, we posit the following research question. All research questions are summarized in Figure 2.

Research Question 2: What Consumer and Ad Variables Determine Consumer Opinions of the Utility of DTCA for Health Care Decision Making?

The specific variables that we consider in the second research question follow: (a) the impact of consumers' demographic characteristics (age, gender, race, education); (b) health characteristics (number of illnesses and amount of drug utilization); and (c) advertisement characteristics (level of exposure to DTC ads, perceptions about drug risk and benefit information, and clarity of the advertisements).

Researchers argue that consumers' attitudes toward DTCA in general and about specific aspects of the ad such as the value it provides in decision making may significantly influence their medication-related behaviors (Peyrot, Alperstein, Van Doren, & Poli, 1998; Williams & Hensel, 1995). Specifically, attitudes may affect patient requests for advertised drug and information search activity through various sources (Peyrot et al., 1998). For the purposes of this study, we operationalize consumers' health care decision making in terms of their drug inquiry behavior (talking to the doctor about an advertised drug), drug request behavior (specifically requesting an advertised drug from physician), and medical condition inquiry behavior (discussing a medical condition with the doctor). To determine the effect of opinions of ad utility on the actual use of ad information in health care decision making, we propose the following research question.

Research Question 3: Do Consumers Utilize DTCA Information in Their Health Care Decision Making? Do Consumers' Opinions of the Utility of DTCA for Health Care Decision Making Influence Their Use of Ad Information in Health Care Decision Making?

Method

Data

The data for this exploratory analysis are obtained from a national consumer survey, conducted by Princeton Survey Research Associates for *Prevention Magazine's* 1999 study on consumer attitudes toward DTCA. A sample of 1,205 consumers was telephonically contacted in April 1999 via random digit dialing and administered the questionnaire. Weighting each observation to adjust for differences in demographic characteristics between the sample and the U.S. noninstitutionalized population ensures national representativeness of the sample. The margin of error as reported by Princeton Survey Research Associates is $\pm 3\%$.

Sample

The eligibility criterion for inclusion of respondents in the survey sample is that respondents had been exposed to any form of DTCA (product-specific ads, nonproduct-specific ads, reminder ads, and health-seeking ads) at least once. Listwise deletion is used to remove missing values and nonresponses. The weight applied to the responses is rebased proportionate to the size of the study sample to ensure that inferential statistics may be computed. Rebased is undertaken by employing standardized weights, derived by dividing each observation weight by the average sample weight.

Study Measures

Opinions Regarding the Decision-Making Utility of DTC Ads

The survey includes an attitude scale assessing consumer attitudes toward advertising of prescription medicines. Within this scale, three items measuring consumers' opinions of the decision-making utility of DTCA are identified. The scale has a 4-point response format anchored at 1 = strongly disagree and 4 = strongly agree. The items used for measuring opinions regarding decision-making utility of DTC ads are provided in Table 3. Exploratory factor analysis is undertaken to determine whether all three items do in fact load on the same underlying latent construct.

Consumers' Demographics and Health Characteristics

Consumers' demographic characteristics assessed in this study are age, gender, race, and level of education. Age is measured on a continuum. Gender is coded 1 = male and 0 = female. Race is recoded to represent a dichotomous measure, where 1 = Caucasians and 0 = non-Caucasians. Level of education is coded in intervals ranging from 1 to 7, where 1 = grade 8 or less, 2 = high school incomplete, 3 = high school graduate, 4 = business or vocational school, 5 = some college, 6 = college graduate, and 7 = postgraduate training or higher. Consumers' health characteristics are operationally defined by the amount of drug utilization they had (number of drugs they were taking) and the number of illnesses they reported.

Level of Ad Exposure and Ad Features

Consumers' exposure to DTCA is measured by aided awareness items for 13 prescription drugs that were being advertised at the time of the survey. The overall level of exposure is the cumulative number of drugs the respondent had seen or heard advertised. The features of DTC ads that are evaluated in this study are consumers' perception of quality of drug risk information, consumers' perception of quality of drug benefit information, and consumers' perception of the clarity of the advertisement. The perception of the quality of risk information is measured using a mean score of four items that assess opinions of the quality and quantity of serious and nonserious drug risk information in both television and magazine ads. Perception of quality of benefit information is measured using a mean score of two items that evaluate the adequacy of benefit information in both television and magazine DTC ads. Ad clarity is operationalized using a single item measure. Consumers' responses to the questions regarding ad features were based on their past experience with DTC ads. Thus, their perceptions of ad features were not limited to a specific ad or to any of the 13 ads being advertised at the time of the survey.

Utilization of DTC Ads in Health Care Decision Making

Utilization of ads in health care decision making is measured as whether consumers utilized ad information for drug inquiry behavior (talking to their physician about a prescription drug), drug request behavior (specifically requesting a prescription drug from their physician), and medical condition inquiry (talking to their physician about a medical condition or illness). These three variables were separate dichotomous measures reflecting behavior in response to any DTC ad that the respondent may have been exposed to in the past.

Table 1 provides a summary of all variables as they are operationalized and measured in this study.

TABLE 1 Operationalization of Variables

VARIABLES	MEASUREMENT
Demographics	
Age	Continuous
Gender	Dichotomous 1 = Male 0 = Female
Race	Dichotomous 1 = Caucasians 0 = Non-Caucasians
Level of education	Interval 1 = grade 8 or less 2 = high school incomplete 3 = high school graduate 4 = business/vocational school 5 = some college 6 = college graduate 7 = postgraduate or higher
Health characteristics	
Amount of drug utilization	Continuous
Number of illnesses	Continuous
Ad exposure	
Level of ad exposure	Continuous
Ad features	
Perception of quality of risk information	Continuous Mean score of 4 items measured on a 4-point scale 1 = Strongly disagree 4 = Strongly agree
Perception of quality of benefit information	Continuous Mean score of 2 items measured on a 4-point scale 1 = Strongly disagree 4 = Strongly agree
Perception of ad clarity	Continuous Single item measured on a 4-point scale 1 = Strongly disagree 4 = Strongly agree
Utilization of DTC ads in decision making	
Drug inquiry behavior	Dichotomous 1 = Yes 0 = No
Medical condition inquiry	Dichotomous 1 = Yes 0 = No

Continued

TABLE 1 Continued

VARIABLES	MEASUREMENT
Drug request behavior	Dichotomous 1 = Yes 0 = No
Opinions of decision-making utility of DTC ads	Continuous Mean score of 3 items measured on a 4-point scale 1 = Strongly disagree 4 = Strongly agree

Analysis

All statistical analyses are performed using SAS version 8.2. Descriptive statistics are computed using the standardized sample weights. A weighted multiple regression analysis is used to determine empirically the statistically significant factors influencing consumers' opinions of DTC ad utility. The predictor variables included in the weighted regression model are consumer demographics, health characteristics, level of ad exposure, and perceptions of ad features. The extent of multicollinearity among candidate predictors is assessed using collinearity diagnostics such as variance inflation factor (VIF), tolerance values, and condition indices (Hair, Anderson, Tatham, & Black, 1998). R-square measures are computed to determine the goodness-of-fit of the fitted regression model. The standardized beta coefficients of the variables are compared to identify which ad feature has the most significant effect on consumer opinions.

Weighted logistic regression analyses are employed to model the likelihood of consumers' utilization of ad information in decision making. Thus three separate logistic regression models are developed to assess the following dependent variables: consumers' drug inquiry behavior, drug request behavior, and medical condition inquiry. Specifically, we are interested in the effect of consumers' opinions of DTC ad utility on whether they actually use ad information in making these health care decisions. Covariates used in this analysis are consumer demographics and health characteristics. Odds ratios and goodness of fit measures are computed for each model. Predictive accuracy and appropriateness of the weighted logistic regression models is analyzed using classification ratios, c-statistic, and R-square measures. Chi-square tests of significance assess the overall significance of the three logistic models.

Results

Refer to Table 2 for an overview of sample demographics and health characteristics. On average, respondents report exposure to more than six DTC ads. Mean ad perception scores were 2.44 for the quality of risk information, 2.78 for the quality of benefit information, and 2.89 for perception of ad clarity (on a 4-point scale). Most consumers had positive opinions of DTC ad utility in decision making. The mean score of consumers' opinion of ad utility was greater than 2.5 (on a 4-point scale) for each item. This finding reflects the positive opinions consumers have about DTC ad utility. Thus, the answer to our first research question is that consumers have positive opinions about DTC ads.

TABLE 2 Sample Characteristics

SAMPLE CHARACTERISTICS	
Mean age	42.03 (SD = 15.48)
Mean income	\$44996.02
Race	
Caucasians	86.6%
Non-Caucasians	13.4%
Gender	
Males	41.8%
Females	58.2%
Education	
8th grade or less	4.8%
High school incomplete	5.4%
High school graduate	32.5%
Business/vocational school	2.4%
Some college	26.2%
College graduate	19.4%
Postgraduate or higher	9.2%
Number of illnesses	
None	27.5%
At least one	72.5%
Amount of drug utilization	
None	52.2%
At least one	47.8%
AD FEATURES	
Mean number of ads recalled	6.65 (out of 13 ads)
Mean risk perception score	2.44 (on a 4-point scale)
Mean benefit perception score	2.78 (on a 4-point scale)
Mean clarity score	2.89 (on a 4-point scale)

The results of the exploratory factor analysis used to determine the factor structure underlying the ad utility subscale reveals (measure of sampling adequacy MSA) for individual items has high values (>0.8). Principal components analysis is used to extract factor loadings. The factor analysis results, using “eigenvalue greater than 1” criterion and visual examination of the scree plot, reveal a unidimensional measure of ad utility. The single extracted component explains 57% of the variance. All subscale items show significant (>0.4) factor loadings (Table 3). Since all items have equal factor loadings and variances, a summated score is computed for “opinion of ad utility.”

The overall multiple regression model including the candidate predictors (Table 4) is statistically significant ($n = 382$, $F = 48.78$, $p < 0.001$) and explains 40% of the variation in the dependent variable. Perceptions of the quality of drug risk information and drug benefit information in the ad, ad clarity, respondent gender, and the number of illnesses the consumer had are significant predictors of consumer opinions of ad utility. Other factors such as race, age, level of education, level of ad exposure, and amount of drug utilization are not statistically significant in explaining consumer opinions of ad utility. An analysis of the standardized regression coefficients reveals that although both quality

TABLE 3 Factor Analysis Results Factors Loadings. (Factor = Opinions of decision-making utility of DTC ads)

Item	Component loadings
Item 1 – DTC ads allow people to be more involved with their health care	0.747
Item 2 – DTC ads help people make their own decisions about prescription medicines	0.728
Item 3 – DTC ads educate people about the risks and benefits of prescription medicines	0.775

TABLE 4 Multiple Regression Results. (Dependent variable = Opinions of DTC ad utility in decision-making) Variables significant in regression model

Variable	Standardized beta value	<i>t</i> statistic	<i>p</i> value
Quality of risk information	0.312	6.151	.000
Quality of benefit information	0.260	5.018	.000
Ad clarity	0.159	3.518	.000
Number of illnesses	0.088	2.145	.033
Gender	−0.095	−2.361	.019

R-square = 0.393; adjusted R-square = 0.385; F test_(5,376) = 48.78, *p* < 0.000.

of risk and benefit information are statistically significant variables, quality of drug risk information has a higher beta coefficient value than quality of drug benefit information. Overall, results of the second research question indicate that five predictor variables are important. These include: perceptions of risk information, perceptions of benefit information, gender, number of illnesses, and clarity of the ad.

More than 40% of sampled consumers report having used DTC ad information in their decision-making process. Almost 42% of consumers discussed a prescription drug with their doctors using information provided in a DTC ad, 18.6% used information provided in the ad to discuss a medical condition, and 13.4% requested their doctor for a drug based on an ad they had seen/heard. Three separate logistic regression models are developed for each of the dependent variables: drug inquiry behavior, drug request behavior, and medical condition inquiry. For each model, we report significant (*p* < 0.01) chi-square tests of model coefficients, demonstrating adequacy of fit. A nonsignificant Hosmer–Lemeshow test and reasonable goodness-of-fit measures also confirm model adequacy. The goodness-of-fit measures such as R-square and the *c*-statistic are reported in Table 5. More favorable opinions of ad utility increase the likelihood of consumers' drug inquiries (OR = 2.252), medical condition inquiries (OR = 2.122), and drug requests (OR = 7.423). Differences are observed across the logistic models among demographic and health characteristics. Thus, the results of the third research objective reveal that consumers are not using the DTC ad information to a great extent in their health care decision making. We find that perceptions about DTCA are important in determining whether consumers will use health information from the ads.

TABLE 5 Logistic Regression Results

Model	Dependent variable	Odds ratios	p value	Wald's statistic		
Odds ratios for "opinions of ad utility"						
Model 1	Talking to doctor about advertised drug	2.252	0.000	18.525		
Model 2	Talking to doctor about advertised medical condition	2.122	0.002	9.428		
Model 3	Requesting that the doctor prescribe advertised drug	7.423	0.000	26.708		
Model	Overall model significance	Classification accuracy	R-square Logit	Nagelkerke R-square	Cox & Snell R-square	c statistic
Model summary						
Model 1	$\chi^2_{(6)} = 164.141, p < 0.00$	0.68	0.126	0.213	0.158	0.728
Model 2	$\chi^2_{(6)} = 120.794, p < 0.00$	0.83	0.129	0.189	0.117	0.697
Model 3	$\chi^2_{(6)} = 23.687, p < 0.00$	0.89	0.256	0.336	0.183	0.801

Conclusions and Implications

The results reported here reveal that most consumers have positive opinions about the utility of DTCA. From this perspective, DTCA serves as a useful informational tool for consumers. We do find, however, that consumer opinions of DTC ad utility vary across patient types. This is not entirely surprising since DTC ads cater to only a certain section of the population who are affected either directly or indirectly (e.g., illness in the family, being at risk for developing the disease) by the condition for which the drug is advertised. Consumers in poorer health perceive DTC ads to be more useful in decision making than those in better health. This finding is consistent with the selective attention theory (Williams & Hensel, 1995). Presumably, these consumers experience a need to regain their health and therefore are more involved in issues concerning health. Perhaps future studies should investigate the utility of the ads as perceived by specific patients having the disease for which the drug is advertised. Female consumers perceive DTC ads to be more useful in decision making than their male counterparts. This may be explained by a tendency for females to be more involved and proactive in matters of personal health (Kart & Engler, 1994).

Positive perceptions of the quality of risk and benefit information in the advertisement significantly improved consumers' opinions of DTC ad utility. The standardized beta coefficients indicate that the quality of risk information is perceived to be a more important feature of DTCA than the quality of benefit information in assessing the utility of drug ads for decision making. This demonstrates that consumers value both risk and benefit information, but perceptions about risk information are more important in shaping opinions of ad utility. As a reviewer of this article noted, it has long been argued that presenting information about negative product attributes within a promotional message improves the credibility of the message.

Although consumers place more importance on how risk information is conveyed in ads, the mean score assigned by consumers to quality of benefit information was much higher than that assigned to risk information. Thus, consumers believe that in DTC ads, drug benefits are better conveyed than drug risks. This is consistent with opinions of many consumer advocates that DTC ads do not adequately adhere to the FDA guidelines of balanced risk and benefit information. The findings reported here encourage manufacturers to incorporate effective risk information in their promotional messages since better communication of product risks positively influences consumer opinions of ad utility.

The study results indicate that the clarity of the ad is a significant determinant of its perceived utility. This implies that clear and comprehensible information in the ad may improve the credibility of the ad and therefore facilitate its utilization in health care decision making. The findings reveal no significant influence of level of ad exposure on opinions of ad utility. This suggests that the quality and personal relevance of message content may be more important in determining ad utility than level of exposure.

The results reveal that fewer than half of the respondents used the ad information in their health care decision making. More consumers discussed the advertised drug with their doctors than the medical condition for which the drug was indicated. Consumers with positive opinions of DTC ad utility used this information to a greater degree in their decision making. Thus, positive opinions of ad utility are key to increasing consumer involvement in the health care decision making process.

For patients, increased participation in the decision making associated with DTCA may motivate greater compliance and adherence with drug regimens, and in turn lead to greater satisfaction with the therapeutic results. For health care providers, greater patient

participation may help to ease the time constraints applied by managed care companies. Furthermore, greater patient input in health care decisions may serve to inform and update physicians about new and possibly more appropriate therapeutic options. Manufacturers may benefit by the increased use of ad information by consumers, as discussions with the doctors and consequent drug inquiries set the consumer on a “path to purchase.” Consumers’ use of ad information in discussions with the physician also will increase product recognition among physicians and thereby the medical community.

Limitations and Future Research

Extraneous variables (e.g., the nature of the patient–physician relationship) may influence our outcome measures. Studies demonstrate that consumers may be skeptical of seeking detailed medical information from their physicians, despite their desire for such information. The nature of the relationship between the patient and physician assumes greater importance when a patient wishes to discuss information from external sources (e.g., information from DTC ads). Physicians often have negative opinions about information that consumers glean from mass media and may discourage discussion of such information. The effect of DTCA on long-term interaction between patients and physicians is certainly a promising direction for future research. The nature and quality of the relationship and its determinants warrant further examination.

The data used in this study were collected more than 4 years ago, and consumer perceptions about DTCA may have changed. In the future, researchers should conduct longitudinal studies to gain a better understanding of evolving consumer perceptions of DTCA and health care. There are limitations associated with the use of retrospective measures such as those used in this study (Golden, 1992). If these measures are reliable and valid, however, the bias introduced may be limited (Miller, Cardinal, & Glick, 1997). The study employs a survey methodology that makes it difficult to draw causal inferences. Further, consumer responses were not based on a specific DTC ad but on their experience with DTC ads in the past. Thus, this study can be characterized as cross sectional and exploratory in nature. Future research may be well served by employing alternative designs to examine potential causal relationships between the variables examined here.

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