

NON-BRANDED OR BRANDED DIRECT-TO-CONSUMER PRESCRIPTION
ADVERTISING – WHICH IS MORE EFFECTIVE?

by

BRENT L. ROLLINS.

(Under the Direction of Matthew Perri)

ABSTRACT

Pharmaceutical manufacturers continue to spend billions of dollars on direct-to-consumer (DTC) prescription advertising. However, due to recent image issues, the industry has increased the amount of non-branded, disease education focused advertising. The Food and Drug Administration (FDA) defines a non-branded communication as one which discusses a disease or condition and makes no mention or representation of a particular drug or device. In order to examine this trend, advertising effectiveness of non-branded ads, compared to the more prevalent branded ads, was analyzed through a series of questions measuring attitude toward the ad, attitude toward the company and attitude toward the pharmaceutical industry. Drug inquiry intent (D_{II}), a relatively new construct in DTC research, and the traditional marketing construct of involvement were also studied. This research also attempted to discover whether intentions to perform a behavior correspond with the behavior. Behavior was measured using a single-item dichotomous question asking subjects whether or not they wanted to see more information at that time. An online survey panel was used to examine the effects of the two DTC ad types.

Four hundred, thirty-seven usable subjects were analyzed. Overall, consumers had moderately positive attitudes toward the different ads, companies and a neutral attitude toward

the pharmaceutical industry. Non-branded ads were equally effective compared to branded ads from an attitudinal perspective. Consumers' level of involvement was the strongest determinant of attitudes in general and within the two ad groupings. Results also show subjects who either viewed the non-branded ad or were highly involved with the specific disease state had more positive drug inquiry intent.

Intent did not correlate to actual behavior. Only 22 percent of subjects actually clicked they wanted to see more information. However, further analysis revealed those with higher drug inquiry intentions performed the behavior significantly more. These results are consistent with behavioral and purchase intention theories. Given the goal of DTC, non-branded ads creation of equally positive attitudes and greater drug inquiry intention make them a viable part of the marketing mix. Future research should more fully measure attitudes, intentions and behavior and consider examining this effect on other product areas, including consumer goods and over-the-counter medications.

INDEX WORDS: Non-Branded, Branded, DTC, Advertising, Effectiveness

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B.S., Ohio Northern University, 2004

A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial
Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2009

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May 2009

DEDICATION

To my boys, Carson and Camron. Daddy loves you more than you could ever imagine.
To my wife, Deanna. You are my everything. My one and only. Without your love, strength
and support, this would not have been possible.

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CHAPTER 1

LITERATURE REVIEW

DTC History

Until the early 1980s, pharmaceutical companies did not advertise specific products directly to consumers. Then, in 1981, the prescription product Rufen® was advertised directly to consumers via print and television ads (Donohue 2006). This, along with a couple of other ads, including ads for Merck's Pneumovax® vaccine, got the FDA's attention and, in 1983, led to a voluntary moratorium on DTC ads (Donohue 2006, Kessler 1990). Even though the moratorium was lifted in 1985, few companies jumped back on the DTC bandwagon.

In the early 1990s, with a number of Rx-to-OTC switches and an overall trend towards more promotional spending, DTC began to increase its presence (Bell 2000, Donohue 2006). Pharmaceutical companies were still focusing on print advertising and shying away from television. Why was this? Prior to 1997, the FDA required ads to contain a portion called the "brief summary." In this, companies were to include the FDA-approved indications, side effects and contraindications. This requirement made television DTC ads difficult to produce. However, in 1997, the FDA relaxed the requirement and gave companies the freedom to not air the entire brief summary and instead refer consumers to a toll-free number, website, print ad or their doctor/pharmacist (Bell 2000, Donohue 2006). Once this concession was made, DTC exploded on TV. Spending on DTC doubled over the next year to over one billion and continues to rise with the latest reported figure of over 5.5 billion in 2006 (DTC Perspectives 2007).

Today, DTC ads are a permanent staple of print and television advertising. As its presence continues to increase, so does the amount of research and discussion examining the phenomena. A simple search of UGA's main host database yields over 2,100 results with the search terms "direct-to-consumer" and "advertising." Adding the term "prescription" to the search still gives over 1,300 results.

The next two sections will examine the pros and cons of DTC from opinion and researched perspectives.

DTC Proponents

Increased Patient Awareness/Education

One of the primary benefits recognized by most researchers is DTC's affect on patient awareness/education. Since the rate limiting step of the pharmaceutical industry is a written prescription/order, DTC's aim is to increase patient and physician awareness of their product. Logic tells us the more a particular stimulus is repeatedly viewed, the more aware a person is of the stimulus. Through print and television media, DTC provides continual stimulus. In fact, the average television viewer sees approximately 16 hours of prescription ads every year (Frosch 2007).

Multiple researchers have shown DTC to increase patient education and awareness of disease states, especially from the physician's perspective. In all cases, a majority of physicians believed DTC to educate patients/parents and increase patient awareness of diseases (AAP 2003, Allison-Otley 2002, Murray 2003, Weissman 2004). Consumer research has also supported this claim. From the late 1980s, when awareness was moderately high (Perri & Nelson 1987), to

today, where over 90 percent of consumers are aware of DTC and have seen an advertisement (Menon 2004, Auton 2006).

Areas of Under-treatment

Closely related to increased patient awareness is DTC's ability to help under-treated and under-diagnosed disease states. DTC has brought into focus disease states which were either previously under-diagnosed or had social stigmas attached. Patients with disease states such as depression, erectile dysfunction and insomnia have greatly benefited from DTC's rise. DTC has been said to give these patients more confidence to discuss the disease and treatment options with their physicians (Auton 2006). Physician and statistical data confirm this increase.

In various physician focused DTC studies, doctors agreed one of the primary benefits of DTC is the motivation it gives patients to seek care for untreated conditions (AAP 2003, Lipsky 1997, Weissman 2004). Prescription data also reinforces this claim for previously under-treated conditions. According to Drug Topics Magazine, of the top 15 brand drugs in 2007, six are indicated for depression (Drug Topics). Furthermore, for the three medications primarily used to treat erectile dysfunction (Viagra ®, Cialis ® and Levitra ®), 15.3 million prescriptions were dispensed in 2007 equating to over 1.47 billion dollars in sales for the three combined (Drug Topics).

Improved Patient Compliance/Adherence

In the area of patient compliance, the postulated positive effects of DTC are similar to that of the alarm clock. As the annoying sound of the alarm tells us it is time to get out of bed, a DTC ad is thought to remind people to take their own medication. The focus of the

advertisement should not matter either. Whether the ad is for the exact medication the patient is taking or not, the effect is thought to be the same (Perri 1999).

These claims, however, are based on one primary survey and a case report. The primary source is Prevention Magazine's survey on DTC from 2000 (Calfee 2002). Of their series of questions, four pertained to compliance or adherence. Fifty percent of their respondents recalled taking a medication they had seen advertised. Furthermore, 27 percent stated the advertisement reminded them to take their medicine, and another 20 percent felt the ad made them adhere to the medication schedule. Finally, 33 percent of respondents felt ads reminded them to refill their medication. Then, in 2002, Glasgow et al. reported the results of a case study on DTC involving six patients. Of the six patients, four adhered to therapy according to the authors' criteria.

Given the lack of primary data, this effect of DTC is one which can be questioned. The logic behind this fits; however, there is a lack of evidence to back up the logic.

Improved Physician-Patient Relationship

In today's healthcare world, the increased awareness brought about by DTC has coincided with a more educated patient population. This directly translates to the patient-physician relationship. This section will focus on research in this area showing DTC's positive effects on this vital relationship.

One would expect a more educated patient to be more involved in the decision making process of drug selection, and this is the most common positive theme in the research. DTC has been found to educate patients and lead to a more productive relationship between patient and physician (AAP 2003, Allison-Otley 2002, FDA 2003, Hollon 2005 and Murray 2003). Also, DTC improves patient's confidence while talking with their doctor (Murray 2003). In this

representative survey of American physicians, 83 percent of physicians agreed to the previous statement. Along those same lines, DTC has increased the quality of patient-physician discussion (Weissman 2004). All of this works to improve the patient-physician relationship.

DTC Opponents

Economics

Those against DTC argue the entire basis for its existence is profit driven. This is a reason the pharmaceutical companies, as mentioned earlier, rank only above the tobacco companies in terms of consumer trust/respect (Arnst 2005). Sadly, no matter how much a company cares about individual well-being and patient health, the data on DTC shows otherwise. According to IMS Health, the major provider of sales/financial data for the pharmaceutical industry, 2007 prescription sales reached 286.5 billion (IMS 2008). Opponents only see the billions in sales/profits generated by the industry.

Where does DTC fit in? Print and television advertisements are what the average American sees from the industry. Direct-to-consumer advertising is the most public portion of the pharmaceutical industry. According to recent figures, between 18 and 20 percent of sales went towards promotion of drugs, which translates to approximately 51 to 58 billion dollars (IMS 2008 & Donohue NEJM 2007). Furthermore, the return on DTC investment (ROI) is too good to ignore. Analysis has shown DTC ROI to be anywhere from \$1.50 to \$6.50 per dollar invested, based on the brand (Auton 2006). Even though DTC only makes up 10 to 15 percent of total promotion, given its aforementioned public nature and the 330 percent increase in DTC dollars spent in the last decade, DTC is the primary target (Donohue 2007).

A final issue is the comparative costs of dollars spent on research and development versus dollars spent on promotion. In 2004, the numbers were fairly even as almost 30 billion was spent on research and development and approximately 28 billion on promotion (Donohue 2007). However, a recent study suggests those numbers are wrong. Gagnon and Lexchin argue the numbers sway heavily in favor of promotion (2008). According to their calculations, in 2004 the industry spent 24.4% of sales on promotion compared to 13.4% for research and development (Gagnon & Lexchin 2008).

The pharmaceutical industry must then continue developing new and effective treatments and focus on overall public health to combat the detractors and show profits are not their primary agenda.

Leads to Inappropriate/Excessive Prescribing

As mentioned earlier, the prescription/order is the single most important piece of business to the pharmaceutical industry. A physician writing a prescription for their particular drug leads to refills and revenue. In this case, any effect DTC may exert on prescribing is then magnified based on this importance. Opponents feel DTC persuades unnecessary requests from patients and, therefore, excessive prescribing by physicians.

Whether it is pressure from patients or the general availability of information and “top of the mind” awareness brought about by DTC, prescribing habits have followed DTC’s rise. According to the most recent numbers, seven of the twelve highest selling, and therefore prescribed, drugs from 2007 are also in the top thirteen in terms of DTC dollars spent (Donohue 2007, Drug Topics Top 200). Numbers, though, are only one way to examine the argument.

Physicians have also been surveyed regarding this issue. Although most believe DTC leads to a better and more interactive conversation with patients (FDA 2003 & Hollon 2005), still less than 10 percent see DTC as a positive influence (Robinson 2004). Approximately 80 percent believe DTC encourages unnecessary treatment (Hollon 2005). Furthermore, many physicians feel added pressure to prescribe the advertised medication (Lewis/FDA 2003).

This phenomenon is best illustrated by the work of Kravitz et al. in 2005. These researchers examined DTC in a randomized, controlled trial using “standardized patients.” The patients depicted major depression or adjustment disorder and either made a brand-specific medication request, a general request for medication, or no request for medication. The results of this work showed DTC’s influence on prescribing in this patient population. Even though more prescriptions were written after a general request, the key point was, in the absence of an overwhelming indication, the brand request received more prescriptions showing a DTC based brand request influenced the prescribed medication (Kravitz 2005).

Balance of Risk vs. Benefit Information

One of the more researched and discussed subjects concerning DTC advertising is the balance, or lack thereof, between risk and benefit information provided in an ad. This is especially true for television advertising given its short time-frame to attract an audience (Auton 2006).

In 1997, the FDA issued a new guidance for DTC stating each ad must have a “fair balance” of risk and benefit information. Deshpande et al. examined this issue from the consumer’s perspective (2004). In their analysis of survey data compiled for Prevention magazine’s study on DTC, the authors found the risk information quality was a more important

feature of an ad for consumers. However, the quality of benefit information was greater than risk information. An earlier review of this literature by Kopp and Bang (2000) also agreed.

Recently, a study by Davis (2007) reiterated the research discussed above. The researcher conducted an anonymous, double-blind survey on adults taken from Syracuse University's Study Response Project. The survey focused solely on consumers' preferences for side effect reporting in DTC. Overall, consumers wanted more numerical data attached to the various side effects and more risk information in general compared to current practice (Davis 2007).

However, consumer content preferences for DTC ads are not met. A recent study by Macias et al. examined this exact issue. Based on their four-tiered classification scheme (lawbreakers, bare minimums, main pack and pro-actives), DTC ads, and TV ads in particular, are substandard when presenting risk information (2007). Others have also noted this same discrepancy (Weissman 2004, Auton 2006).

Negative Impact on Physician-Patient Relationship

Though DTC has positively impacted the patient-physician relationship as discussed previously, it has also strained certain aspects. Not surprisingly, most studies focusing on DTC and the patient-physician relationship, or physician attitudes, found negative results as well as positive.

Specifically concerning the patient-physician encounter, DTC has increased the pressure on the MD, lead to questions of competence, and damaged the time efficiency of a visit (AAP 2003, Lipsky 1997, Murray 2003).

A second issue with the patient-physician relationship is DTC's negative effect on the physician workload (Auton 2006, Lipsky 1997). An unnecessary conversation about an advertised medication works to decrease the efficiency with which a physician works and promote a more in and out, stressful practice. Also, Zachry et al. showed if a specific medication request was made based on DTC, the physician was far less likely to provide samples or other handouts/information, thus showing a negative physician response.

DTC Literature Summary

Direct-to-consumer prescription advertising is one of the most highly researched and scrutinized topics in healthcare today. As previously discussed, the financial data shows the dollar benefits are staggering for the pharmaceutical industry. One should see the dollars spent on DTC continue to be a major healthcare issue as companies to continue to squeeze every penny out of their branded medications.

CHAPTER 2

CONSTRUCTS

Attitude Towards the Ad & Company

Traditionally, advertising effectiveness has been measured using two primary constructs, attitude toward the ad (A_{AD}) and attitude toward the brand (A_B). These constructs originate from advertising research in the late 70s and early 80s focusing primarily on brand choice and behavior prediction (Shimp 1981, Ajzen 1980). Their role in DTC literature has gradually increased.

A_{AD} is defined as a “predisposition to respond in a favorable or unfavorable manner to a particular advertising stimulus during a particular exposure occasion” (MacKenzie 1986). In the most basic sense, A_{AD} refers to an advertisements’ ability to invoke feelings/attitudes, i.e. affective reactions, in its viewers. Attitude toward the ad differs from attitude toward the brand (A_B) in that A_{AD} refers strictly to the advertisement and A_B refers strictly to the brand. Attitude toward the brand focuses more on the cognitive and decision-making aspects of an advertisement (Shimp 1981 & MacKenzie 1986).

In this study, though, attitude toward the brand will be replaced by attitude toward the company (A_C). Since a branded advertisement will be compared with a non-branded advertisement, A_B cannot be equally measured in both cases. By definition, a non-branded advertisement makes no mention of the brand product. Since the company appears in both types of ads and is the single identifier in a non-branded advertisement, it is the logical choice to

measure and replace A_B . Therefore, attitude toward the company is operationally defined as a “predisposition to respond in a consistently favorable or unfavorable manner to a particular pharmaceutical company within a DTC ad” (Muehling 1988). This definition simply replaces brand with company.

Research on the topics have shown various important effects. Attitude toward the ad has been shown to directly effect cognitive and affective perceptions of the brand (MacKenzie 1989). A_{AD} also has roles as a mediator of advertising effectiveness (MacKenzie 1986) and a possible direct influencer of purchase intent (Mitchell 1981). In DTC research, the primary focus has been on the attitudes toward DTC in general.

When asked about their feelings toward DTC, consumers have been relatively consistent. Whether it be the educational value of DTC (Alperstein 1993), providing information they deserve to know (Perri 1987) or DTC in general (Hernstein 2004), consumers have held favorable attitudes toward DTC. Attitude toward the ad specifically, though, has not been examined in published literature focusing on DTC.

Drug Inquiry Intent

Any study measuring intent has roots in the business literature’s examination of purchase intent, i.e. whether a person intends to buy a specific product. Closely related is a relatively new construct in DTC referred to as drug inquiry intent (D_{II}). Although the general idea has been around since the inception of DTC, the terminology is relatively new.

Drug inquiry intent is defined as “the likelihood an individual will seek further information from alternative sources (Internet) regarding the ad and/or ask the physician to discuss/possibly prescribe an advertised medication for their medical condition” (Menon 2004).

Given the intermediary that exists with DTC, as well as its primary goal (i.e. the physician writing a prescription), intent to discuss or even request a prescription for an advertised product has continually been measured in DTC research.

Early research showed a significant amount, measured as high as 83 percent, of consumers would ask their physician about an advertised medication (Perri 1987, Perri 1988). Other research examining this construct indirectly measured behavioral intentions. Doucette and Schommer examined consumers' primary source for information seeking after exposure to a DTC ad (1998). Among pharmacists, nurses, family/friends, medical reference books, physicians, or manufacturers, physicians were most sought after seeing a DTC ad. However, in a survey by Williams & Hensel (1995), pharmacists and family/friends were preferred as compared to physicians. More recently, drug inquiry intent was examined as it relates to perceived health knowledge and attitudes toward DTC (An 2007). This research showed only those consumers with high perceived health knowledge and positive attitudes toward DTC have increased drug inquiry intent and drug requests. These results supported earlier research examining the same construct by Herzenstein et al. (2004).

Involvement

A final construct vital in DTC and attitude formation in general is involvement. Involvement in advertising refers to a consumer's level of processing and attention paid to various advertisements. Its importance revolves around its moderating role in attitude formation (Petty 1983). Specifically, it is defined as "a person's perceived relevance of the object based on inherent needs, values, and interests" (Zaichkowsky 1985).

The construct consists of two possible states, either high or low involvement. High referring to those situations where the consumer is an “avid seeker and manipulator of information” (Petty 1983), and low involvement being when a consumer is passive and less affected by content (Petty 1983).

Involvement’s role in DTC has been discussed on both ends of the spectrum. Earlier research suggests DTC ads fall into a high involvement situation for the message and product (Perri 1988). Recently, however, DTC has been viewed as a means to get low involved consumers to take notice of the advertised drug or condition (Menon 2004). One could also argue the level of involvement is solely dependant on the individual and not generalizable to certain groups. Therefore, a debate still exists under which involvement condition DTC truly operates.

CHAPTER 3

ATTITUDES

Introduction

Prescription direct-to-consumer (DTC) advertising has quickly become one of the most scrutinized and researched topics in marketing and advertising. Since 1997, when the Food and Drug Administration (FDA) relaxed its stance on prescription advertising through broadcast media (internet, radio and television) (Findlay 2001), pharmaceutical manufacturers have spent billions on DTC in an effort to increase prescriptions written for their products. Even though recent numbers show an overall decrease in spending give the current economy, the dollars spent had continually increased to over \$5.5 billion in 2006, a 330 percent increase since 1997 (Donohue 2007, DTC Perspectives 2007). Today, DTC ads are a permanent staple of print and television advertising. In fact, the average television viewer sees approximately 16 hours of prescription advertising on a yearly basis (Frosch 2007).

Proponents of DTC advertising argue that it achieves its primary goal of increasing patient awareness and education. Physician (AAP 2003, Allison-Otley 2002, Murray 2003, Weissman 2004) and consumer (Perri 1987, Menon 2004, Auton 2006) research has demonstrated this effect. Furthermore, DTC has been shown to help areas of under-treatment, including under-diagnosed conditions or those having a high social stigma attached, such as depression (AAP 2003, Lipsky 1997, Weissman 2004, Auton 2006). Lastly, supporters suggest DTC improves patient compliance (Perri 1999, Calfee 2002) and the physician-patient relationship (AAP 2003, Allison-Otley 2002, FDA 2003, Hollon 2005, and Murray 2003).

Opponents point to DTC's negative effects on prescribing (Hollon 2005, Kravitz 2005, Lewis 2003 and Robinson 2004), the physician workload (Auton 2006, Lipsky 1997) and the lack of "fair balance" between benefit and risk information (Auton 2006, Deshpande 2004, Macias 2007, Weissman 2004). However, opponents' primary focus is on the economic issues related to DTC. Overall promotional spending now represents 18 to 20 percent of sales, which translates to approximately 51 to 58 billion dollars (IMS 2008 & Donohue 2007). Even though DTC only makes up 10 to 15 percent of overall promotion, DTC is the primary target of public opposition (Donohue 2007).

As the dollars spent on DTC has increased, so has the negative public image associated with the pharmaceutical industry. Recently, the pharmaceutical industry was only above the tobacco industry, the lowest ranking industry in the survey, in terms of the public viewpoint (Arnst 2005). Furthermore, numerous lawsuits and a public outcry against the pharmaceutical industry ensued when Vioxx® was removed from the market in September 2004 (Arnst 2005). In November 2007, Merck, the maker of Vioxx®, settled the lawsuits against the company for almost 5 billion dollars (Berenson 2007). These image issues, as well as other controversial DTC issues such as its effect on prescribing and the amount of risk versus benefit information presented, have led to DTC being a continually debated topic.

In order to combat the image issues and negative public opinion, the pharmaceutical industry has shifted some of its advertising focus to non-branded advertising. Non-branded, or "help-seeking" (FDA 2004), advertising focuses more on disease education and medication compliance. In its 2004 "Guidance for Industry", the FDA defines a non-branded communication as one which discusses a disease or condition and makes no mention or representation of a particular drug or device. Under this guidance, these communications are

exempt from regulation by the agency unless there is only one drug or device used in the disease/condition (FDA 2004).

A recent example is Pfizer's "My time to quit" campaign (www.mytimetoquit.com). In the advertisement, a female smoker states specific times in her day when she needs to smoke a cigarette and how difficult it is to quit. She then states it may be time to talk to her physician. After informational material about the website and its contents is presented, the ad reverts back to the smoker, who states "it is 11:35 and it's my time to quit." Similar to the previous example, the ad refers viewers to a phone number and website for more information. On the website, a link is provided for information about a prescription treatment option to help one quit smoking. The user is then linked to the website for Pfizer's branded smoking cessation agent, Chantix ® (www.chantix.com).

This strategy represents a different focus for pharmaceutical companies in response to public and political policy issues. The company can use the ad to educate consumers about a specific disease state, direct them to a website for more information and then provide information about their branded medication. Merck is another example of an organization following this trend. In 2005, Merck spent 57 million dollars on non-branded ads, compared to only 83 thousand in 2003 (Arnold 2006). Until the recent economic troubles, the amount spent on non-branded advertising overall was continuing to rise. Examining the top 15 non-branded DTC campaigns, over 400 million was spent in 2006 (DTC Perspectives 2007).

Even though overall DTC spending, and in particularly non-branded spending, has decreased in the face of the recent economic challenges (TNS Media 2008), further examination of the differences between non-branded and branded advertisements was needed. To date, no published research has directly examined this issue.

Traditionally, in addition to sales analysis and ad recall, advertising effectiveness has been measured using two primary constructs, attitude toward the ad (A_{AD}) and attitude toward the brand (A_B). These constructs originate from advertising research in the late 70s and early 80s focusing primarily on brand choice and behavior prediction (Shimp 1981, Ajzen 1980). Their role in DTC literature has gradually increased.

A_{AD} is defined as a “predisposition to respond in a favorable or unfavorable manner to a particular advertising stimulus during a particular exposure occasion” (MacKenzie 1986). In the most basic sense, A_{AD} refers to an advertisements’ ability to invoke feelings/attitudes, i.e. affective reactions, in its viewers. It has been shown to directly effect cognitive and affective perceptions of the brand (MacKenzie 1989), mediate advertising effectiveness (MacKenzie 1986) and influence purchase intent (Mitchell 1981). In terms of DTC, the focus has primarily been on overall attitude toward the advertising, in which consumers have held favorable attitudes toward DTC (Alperstein 1993, Perri 1987, Hernstein 2004).

Attitude toward the brand focuses more on the cognitive and decision-making aspects of an advertisement (Shimp 1981 & MacKenzie 1986). In this study, though, attitude toward the brand is replaced by attitude toward the company (A_C). Since a branded advertisement will be compared with a non-branded advertisement, A_B cannot be equally measured in both cases. By definition, a non-branded advertisement makes no mention of the brand product. Since the company appears in both types of ads and is the single identifier in a non-branded advertisement, it is the logical choice to measure and replace A_B . Therefore, attitude toward the company is operationally defined as a “predisposition to respond in a consistently favorable or unfavorable manner to a particular pharmaceutical company within a DTC ad” (Muehling 1988).

Another construct vital to DTC and attitude formation is involvement. Involvement in advertising refers to a consumer's level of processing and attention paid to various advertisements. Its importance revolves around its moderating role in attitude formation (Petty 1983). Specifically, it is defined as "a person's perceived relevance of the object based on inherent needs, values, and interests" (Zaichkowsky 1985). It consists of two possible states, either high or low involvement. High referring to those situations where the consumer is an "avid seeker and manipulator of information" (Petty 1983), and low involvement being when a consumer is passive and less affected by content (Petty 1983). Involvement's role in DTC has been presented as existing under both low and high involvement (Perri 1988, Menon 2004).

Here, we attempt to clarify these issues and quantify the differences between non-branded and branded DTC advertising. The researchers' objective was to answer the following specific research questions:

1. To what extent are non-branded advertisements more effective from a consumer attitude perspective compared to branded advertisements?
2. To what extent do non-branded advertisements more positively affect consumer attitudes toward the pharmaceutical industry?
3. How does a consumer's involvement level with the subject matter affect the attitudes created by the two ad types?

Methods

This experiment utilized a randomized, cross-sectional design. Zoomerang's (www.zoomerang.com) survey software was used to create four surveys, each with a different ad for the subject to view. Surveys were administered to consumers through Zoomerang's

consumer panel database. Two distinct sample groups were surveyed. The first group consisted of adult (18+) allergy sufferers, while the second group consisted of females between the ages of 18 and 50.

The allergy group consisted of two subgroups. One group was shown the non-branded allergy information ad and the second group was exposed to a branded ad for Allergone®, a fictitious allergy medication. The female group contained the same subgroups. One viewed the non-branded oral contraception information ad, while the second group was shown a branded ad for Anerim®, a fictitious oral contraceptive. The drug and pharmaceutical company names (DAB Pharmaceuticals, Inc. and C & C Pharmaceuticals, Inc., respectively) were also fictitious and created to eliminate any pre-disposed bias.

The stimuli modeled the form of current print DTC ads, and the picture/graphics were maintained between the non-branded and branded ads. In addition, the company name and logo was also maintained in each ad form. The only information that changed between the branded and non-branded conditions was the presence or absence of the brand names.

The online survey included 16 questions to measure involvement, attitude toward the ad, attitude toward the company, and attitude toward the pharmaceutical industry. Level of involvement was assessed first, using Zaichkowsky's Personal Involvement Inventory (PII) (1994). This ten-item, seven-point semantic differential scale has been validated, reports high internal consistency numbers and was scored per Zaichkowsky's methods using the median score in order to classify a subject to either be of low or high involvement.

Each of the dependent variables (A_{AD} , A_C , and A_I) was measured using a three-item, seven-point semantic differential scale which has shown high internal consistency numbers

(MacKenzie 1986, Muehling 1988, MacKenzie 1989). Behavioral intentions measures were also included in the questionnaire, but are assessed in a different paper.

In order to determine sample size, power was set at 0.8 (Cohen 1988), and an a priori alpha level of 0.05 was chosen. Based on the lack of previous research examining this phenomenon, a medium effect size ($f = 0.25$) was used in calculations.

Given the two (ad types) by two (levels of disease state involvement) nature of the data, a sample size of 45 per population cell for a total sample size of 180 (45×4) was necessary per sample group. A total of 437 usable subjects were completed within 24 hours of deployment and used in the analysis ($n = 219$ Allergy group and $n = 218$ Oral Contraceptive group).

Results

Demographic statistics are listed in Table 1 by group. Given the internet panel sample medium, the overall respondent group was relatively young (58.9% between 18 & 35) and well educated (62.7% with at least some college or higher). Within the allergy group, there were more male respondents (56.2%) and a more even distribution of ages. In terms of the scales used, high internal consistency data was seen with all scales. Coefficient alpha ranged from 0.896 (involvement scale) to 0.980 (attitude toward the industry scale). Also, the overall reliability of each scale decreased when any individual item was deleted. Reliability for all scales are presented in Table 2.

Across all data and ad types, consumers showed moderately favorable attitudes towards the different ads (mean = 4.95 ± 1.35) and companies (mean = 4.73 ± 1.32). Respondents were neutral in their attitude toward the pharmaceutical industry, though (mean = 4.19 ± 1.53). In terms of involvement, 79.2 percent of all subjects were classified as having high involvement.

Though negatively skewed, distribution tests showed the skewness not significant and the data to be approximately normal.

Multiple hypotheses were then tested and adjusted with the Bonferroni correction procedure. Overall, the three attitude scales (A_{AD} , A_C , & A_I) showed no difference between the branded and non-branded ads ($F=1.135$, 1.688 , 1.237 , respectively). Demographic differences were also assessed. There were no observed statistically significant differences between gender, age or education levels. Comparisons were then made within the two sample groups. For both groups, as seen with the overall data, there was no difference among the three attitudinal dependent variables.

Subjects were asked whether or not within the past year they had, one, talked to their physician or, two, asked for a prescription for a medication they had seen/heard advertised. Consumers who responded yes to either of those two questions had significantly more positive attitudes ($p < 0.001$) in all cases except for A_I and those who have asked for a prescription for an advertised medication in the past year.

Analysis of variance was employed to test the effects of high or low involvement on the various dependent variables. For all variables, more highly involved consumers had significantly more positive attitudes for all three variables; A_{AD} , A_C , and A_I ($p < 0.001$). As presented above, overall attitude toward the pharmaceutical industry was neutral. However, for low involved consumers A_I was negative (mean= 3.60 ± 1.60).

In the allergy group, as seen with the overall data, all attitudinal measures were significantly greater with highly involved consumers ($p < 0.001$). Further examination between the ad types revealed different results. For those viewing the branded allergy ad, highly involved consumers had more positive A_{AD} and A_C ($p < 0.001$). However, for those seeing the non-

branded allergy ad, no significant attitudinal differences were seen. The oral contraceptive group also had different results when examined as a group. In the branded ad sample, only A_I ($F=5.931$, $p < .02$) was significantly more positive for highly involved consumers, and A_{AD} and A_I were significantly more positive for the non-branded recipients.

The possible interaction effects of ad type and involvement on the various attitudinal variables were then tested. Even though the main effect of involvement was significant for all attitudinal measures, the combined effect of involvement and ad type on the dependent variables was only statistically significant with the allergy group and its effect on attitude toward the ad ($F=4.708$, $p < 0.03$). All other interaction effects were non-significant.

Discussion

These results show non-branded ads are equally effective in creating more positive attitudes surrounding the advertisement. Attitudes toward the ad and company were moderately favorable and showed no difference between the ad types or within the two different study groups. A_{AD} and A_C did not differ with age, gender or education level. The only significant differences arose for highly involved consumers or those who had discussed an advertised medication with their physician. These results suggest that, after more than a decade of heavy DTC advertising, general attitudes toward these ads and the companies presenting them have stabilized. Given this finding, pharmaceutical firms may want to pre-test any radical deviations from current practices (ad content, imagery, overall themes) in order to maintain current ad effectiveness levels.

Our findings show overall attitudes toward the pharmaceutical industry are relatively neutral. Neither the different ad types nor different study groups had a significant affect on A_I .

Further examination of the construct revealed two unique situations based on consumer involvement. The majority of the sample was classified as high involvement and had neutral to slightly positive A_I . Low involvement consumers, though, had moderately negative attitudes toward the pharmaceutical industry. Given this distribution of responses, the mean is irrelevant. From an overall industry marketing perspective, any DTC targeted to low-involvement consumers must be highly appealing in order to engage these consumers and produce positive effectiveness measures. Marketing efforts targeted to high-involvement consumers might highlight the industry's benefits and positive outcomes.

Overall, we find that involvement influences all comparisons and leads to significantly more positive attitudes without factoring in the ad type. Previous consumer research reinforces this finding, as higher involved individuals have more positive ad effectiveness responses. The most important differences, though, were within the study groups. For the branded allergy group, more highly involved consumers had significantly more positive attitude toward the ad and company. However, in the non-branded group, no significant differences were seen. In this ad group, then, attitude formation was independent of involvement level, and moderately favorable attitudes were maintained. Therefore, a non-branded ad still produced favorable attitudes, even for low-involvement consumers.

From the pharmaceutical industry's perspective, if use of non-branded ads can still maintain, or even positively affecting, attitudes, then their presence in the advertising mix is viable and should be maintained even though dollars spent on them has decreased during the economic downturn (TNS Media 2008). When coupled significantly greater behavioral intentions (Rollins 2009, pg. 29 & 30), these findings imply that consumers may have more

positive attitudes while also seeking more information about the disease state and having more discussions with their physician after viewing a non-branded ad.

The pharmaceutical industry and the FDA do not always agree on DTC advertising issues. In this case, our findings are also positive from the FDA's perspective considering the aforementioned controversy surrounding the amount of risk and benefit information provided in branded DTC ads. Opponents argue that a "fair balance" is not currently presented, allowing benefit information to be the ad's focus. Increasing the presence of non-branded advertising, particularly on television, would remove the risk-benefit balance component. From the FDA's perspective, the consumer would then be exposed to more informational/neutral advertising and encounter fewer ads that concentrate primarily on the benefits a medication provides.

Limitations of this study focus on the collection medium. Given the internet-based method of data collection, the sample was limited to those individuals involved in Zoomerang's consumer panel. This group might have very different opinions than the general population. Only two product classes (i.e. allergies and oral contraceptives) were tested. One product class restricted the subjects to females only and allergy patients were not surveyed during peak allergy season. Responses may vary across medications or disease states, especially when complex medical issues are involved.

Conclusions

Overall, non-branded ads are equally effective compared to branded ads from an attitudinal perspective. Consumers' level of involvement was the strongest determinant of attitudes in general and within the two ad groupings. Regardless of involvement level, though, the non-branded ads maintained attitude levels. Future research should examine this

phenomenon in equally complex disease states with more homogenous patient populations. A researcher could even focus the comparison on the elderly population's response to these differing ad types.

CHAPTER 4

INTENTIONS

Introduction

Over the last half-century, the measurement of behavioral intentions has been vital to marketing and psychology research. Intent is used by both disciplines, and throughout academic research, as the closest and most accessible representation of future behavior (Chandon 2005). The theoretical basis arises from Ajzen and Fishbein's Theory of Reasoned Action (1980) and, later, Theory of Planned Behavior (TpB) by Ajzen (1985). These theories state an individual's behavior is directly preceded by one's intentions/plans to perform the behavior. Intentions are formed by one's attitudes toward the behavior, subjective norms and perceived behavior control (Ajzen 1985). They have been measured in order to predict or describe various human behaviors, including: political, work, consumer and health-related behavior (Davis 2001).

The application of these theories in healthcare research has expanded. Within the pharmaceutical industry, behavioral intention research has primarily focused on whether a consumer intends to discuss with their physician, or ask for a prescription, for an advertised medication. This construct has been termed drug inquiry intent, and even though the theoretical basis for its measurement has existed for decades, the terminology is relatively new in direct-to-consumer (DTC) prescription advertising. Drug inquiry intent (D_{II}) is defined as "the likelihood an individual will seek further information from alternative sources (Internet) regarding the ad and/or ask the physician to discuss/possibly prescribe an advertised medication for their medical condition" (Menon 2004). Drug inquiry intention has been researched directly, i.e. asking

consumers whether they would discuss an advertised medication with their physician, (Perri 1987, Perri 1988, An 2007, Herzenstein 2004) and indirectly, asking where consumers primary information source after exposure to a DTC ad (Doucette 1998, Williams 1995).

Overall, the pharmaceutical industry and DTC advertising have faced recent image issues and negative public opinion, (Arnst 2005) causing the industry to shift some of its focus to non-branded advertising. Non-branded, or “help-seeking” (FDA 2004), advertising focuses on disease education and medication compliance. In its 2004 “Guidance for Industry”, the FDA defines a non-branded communication as “one which discusses a disease or condition and makes no mention or representation of a particular drug or device (i.e. brand)”. Under this guidance, these communications are exempt from regulation by the agency unless there is only one drug or device used in the disease/condition (FDA 2004).

This study attempted to elicit whether behavioral intentions in response to a prescription DTC ad differ between branded and non-branded advertisements. To date, no DTC research has directly examined this issue. Based on this information, the following hypotheses were examined:

1. To what extent do non-branded ads, as compared to branded, stimulate greater consumer drug inquiry intent?
2. How does a consumer’s involvement level with the subject matter affect the behavioral intentions created by the two ad types?

Methods

This experiment utilized a randomized, cross-sectional design. Zoomerang’s (www.zoomerang.com) online survey software was used to create four surveys, each containing

a different ad. Subjects were gathered through Zoomerang's consumer panel database. Two distinct sample groups were surveyed. The first group consisted of adult (18+) allergy sufferers, while the second group consisted of females between the ages of 18 and 50.

Each sample consisted of two subgroups. One group was shown the non-branded, informational ad and the second group the corresponding branded ad. The drug (Allergone® and Anerim®) and pharmaceutical company names (DAB Pharmaceuticals, Inc. and C & C Pharmaceuticals, Inc., respectively) were fictitious and created to eliminate any pre-disposed bias. The ads modeled the form of current print DTC ads. For each non-branded / branded ad group, all information and graphics remained the same except for the presence or absence of the aforementioned brand names.

The online survey included 16 questions aimed at measuring drug inquiry intent and involvement. Level of involvement, defined as "a person's perceived relevance of the object based on inherent needs, values, and interests" (Zaichkowsky 1985) was assessed first, using Zaichkowsky's Personal Involvement Inventory (PII) (1994). This ten-item, seven-point semantic differential scale has been validated, reports high internal consistency numbers and was scored per Zaichkowsky's methods, using the median score in order to statistically define a respondent to either be of low or high involvement.

Drug inquiry intent (D_{II}) was measured using a three-item, seven-point semantic differential scale which has shown high internal consistency numbers (MacKenzie 1986, Muehling 1988, MacKenzie 1989). These scales were compatible with a Theory of Planned Behavior intention question set (Ajzen 2002) and measured the three dimensions of D_{II} .

Consumers were asked about their intent to seek more information (D_{II} -Seek), whether they

would discuss the medication/disease state with their physician (D_{II} -Discuss) and whether they would ask for a prescription for the medication/disease state (D_{II} -Ask). In addition, intent was measured by asking respondents to type in a number between 0 and 100 representing how likely they would be to seek more information about the medication/disease state (D_{II} -Likelihood).

Sample size was determined with power set at 0.8 (Cohen 1988), an a priori alpha level of 0.05 and, based on the lack of previous research examining this phenomenon, a medium effect size ($f = 0.25$). Given the two (ad types) by two (levels of disease state involvement) nature of the data, a sample size of 45 per population cell for a total sample size of 180 (45 x 4) was necessary per sample group. A total of 437 usable surveys were completed within 24 hours of deployment and analyzed (n= 219 Allergy group and n= 218 Oral Contraceptive group).

Results

Demographic statistics are listed in Table 1 by group. The overall respondent group was relatively young (58.9% between 18 & 35) and well educated (62.7% with at least some college or higher). Within the allergy group, there were more male respondents (56.2%) and a more even distribution of ages. High internal consistency data was seen with all three scales.

Coefficient alphas reported were: D_{II} -Seek = 0.949, D_{II} -Discuss = 0.966, D_{II} -Ask = 0.970.

Also, the overall reliability of each scale decreased when any individual item was deleted.

Across all data and ad types, consumers expressed a moderate likelihood to seek more information about the medication/disease state (D_{II} -Seek Mean = 4.49 ± 1.75), discuss it with their physician (D_{II} -Discuss Mean = 4.70 ± 1.76) and ask for a prescription for the

product/disease state (D_{II} -Ask Mean = 4.43 ± 1.87). A composite of the three scales yielded an overall intent mean of 4.53 ± 1.66 . Further, subjects were moderately likely to seek more information, based on a 0-100 scale (Mean = 60.84 ± 27.97).

Subjects were then asked if, within the past year, they had talked to their physician about a medication they had seen/heard advertised, and if they had asked for a prescription for a medication they had seen/heard advertised. Thirty-three percent of respondents ($n=142$) had talked to their physician and 22 percent ($n=97$) asked for a prescription for an advertised drug.

Consumers were then asked where they would look first for further information about the medication/disease state. The choices included (in the order presented): 1-800 number in the ad, friend/relative/neighbor, internet, magazine, making appointment with physician, newspaper, pharmacist/other healthcare professional, reference book, or other. As a first choice, 53.5 percent chose the internet ($n=234$). This was followed by making an appointment with their physician (16.5 percent, $n=72$) and speaking with a pharmacist or other healthcare professional (16 percent, $n=70$). Then, consumers were asked which source, if any, they would consult next for more information about the medication or disease state. The first three choices paralleled the initial question (internet, appointment with physician, and talking to the pharmacist). Speaking with a friend or relative was the fourth choice.

Intent was further analyzed based on consumer involvement level and the different ad types. For all four measures of intent, highly involved consumers exhibited significantly greater intentions (D_{II} -Seek $F=40.03$, $p < 0.001$; D_{II} -Discuss $F=28.99$, $p < 0.001$; D_{II} -Ask $F=19.17$, $p < 0.001$; D_{II} -Likelihood $F=15.54$, $p < 0.001$). In terms of the ad types, subjects who viewed the non-branded ads were significantly more likely to discuss the prescription/disease state with their

physician ($F=12.968$, $p < 0.001$) and ask for a prescription ($F=9.203$, $p < 0.003$). Demographic comparisons were also run, however, no differences were seen with intent measures and either age, gender or education level.

The possible interaction effects of ad type and involvement on behavioral intentions were then tested. Even though the main effect of involvement was significant for all measures, the combined effect of involvement and ad type on the various intention measures was not significant.

Discussion

Overall, respondents showed moderate likelihood of engaging in drug information seeking behavior. However, examining the data with respect to the different ad types and involvement levels showed significant differences. Those who saw the non-branded ad had more positive intent measures in all cases. From a marketing perspective, a non-branded ad should be an option to engage these consumers and induce greater drug inquiry. Keeping the goal of DTC advertising in mind, the fact consumers may seek more information about the disease state and have more discussions with their physician after viewing a non-branded ad is vital information for the pharmaceutical industry. In this case, not only would the industry benefit from greater discussions with physicians, they would have the added image benefit of promoting disease education and removing the controversial “fair balance” issue associated with branded advertising.

Next, a person’s disease state involvement level significantly influenced all intention measures. Just as those who saw the non-branded advertisement, highly involved consumers had more positive intent measures in all four cases. Most DTC marketing is targeted to those

individuals suffering from a particular disease state, i.e. high involvement. Therefore, based on these findings, non-branded ads would lead to more physician discussion and prescription requests in this important group. On the other side, for ads targeted to low involvement consumers, who had negative intentions to seek more information, creativity and attention getting must be the goal to engage this consumer group.

These results are also positive from the FDA's perspective. Increasing the amount of disease education via non-branded advertising gives the general consumer more information to use in medical decision making. Granted the pharmaceutical manufacturer is indirectly advertising their own branded product, consumers typically must access the disease information material before being able to click on available treatments options.

Limitations of this study focus on the collection medium. Given the internet-based method of data collection, the sample was limited to those individuals involved in Zoomerang's consumer panel. This population is one which might carry vastly different opinions as opposed to someone viewing the ads within a magazine or on their television. Lastly, only two product classes, allergies and oral contraceptives, were chosen for the actual advertisements. One product class also restricted the respondents to females only. Responses may vary across medications or disease states, in particular those which are more complex.

Conclusions

Drug inquiry intent was significantly higher for those who viewed the non-branded advertisement. Given the goal of DTC, non-branded ads inducing greater drug inquiry makes them a viable part of the marketing mix. Further, as previous research suggests, involvement level was vital to behavioral intent. Future research should continue to examine the two ad types

in varying, and similar, levels of disease complexity and in various product categories, such as consumer goods or over-the-counter medications.

CHAPTER 5

INTENTIONS VS. BEHAVIOR

Introduction

In all areas of research, human behavior has been dissected and analyzed in an attempt to predict future behavior. The area of direct-to-consumer prescription drug advertising is no different. Whether or not consumers' discuss an advertised medication with their physician has been the desired behavior tried to be measured. Due to behavioral theories, drug inquiry intent has become the focus. Drug inquiry intent is defined as "the likelihood an individual will seek further information from alternative sources (Internet) regarding the ad and/or ask the physician to discuss/possibly prescribe an advertised medication for their medical condition" (Menon 2004). Its measurement stretches back decades to the behavioral intentions theories by Ajzen and Fishbein (1980). These theories have been used in order to predict or describe various human behaviors, including: political, work, consumer and health-related behavior (Davis 2001).

In the area of consumer behavior, and specifically purchase intent, a large body of research has recently examined the effects of measuring intent on actual behavior. This effect has come to be known as the "mere-measurement effect" (Morwitz 1993, Fitzsimmons 1996). This theory has shown that by simply measuring behavioral/purchase intentions, actual behavior changes. Purchase behavior, measured on primarily consumer goods such as automobiles or personal computers, tends to parallel the intention measures by occurring more often just because intentions are being measured (Morwitz 2004).

This report aimed to examine whether drug inquiry intent correlated with information seeking behavior.

Methods

This experiment employed a randomized, cross-sectional online survey design. Zoomerang's (www.zoomerang.com) survey software was used to create four surveys, each with a different ad for the subject to view. Two distinct sample groups were surveyed. The first group consisted of adult (18+) allergy sufferers, while the second group consisted of females between the ages of 18 and 50.

Within each sample, one group was shown the non-branded, informational ad and the second group the corresponding branded ad. The ads modeled the form of current print DTC ads and the picture/graphics were maintained between the non-branded and branded ads. In addition, the company name and logo were also maintained in each ad form. The only information that changed between the branded and non-branded ad was the presence or absence of the brand name.

Drug inquiry intent (D_{II}) was measured using a three-item, seven-point semantic differential scale which has shown high internal consistency numbers (MacKenzie 1986, Muehling 1988, MacKenzie 1989). These scales were also compatible with a Theory of Planned Behavior (TpB) intention question set (Ajzen 2002). Three different areas were assessed with three different scale sets. Subjects were asked about their intent to seek more information (D_{II} - Seek), whether they would discuss the medication/disease state with their physician (D_{II} - Discuss) and whether they would ask for a prescription for the medication/disease state (D_{II} -

Ask). Deviating from the TpB model, intentions were also measured using a rating scale which asked subjects to type in a number between 0 and 100, representing how likely they would be to seek more information about the medication/disease state (D_{II} -Likelihood).

Behavior was measured using a single-item which asked consumers whether or not they wanted to see additional information about the medication/disease state at that particular time. If the response was yes, the subject was linked to a debriefing slide explaining the fictitious nature of the medication and thanked for their participation. For a no response, respondents were taken to the final question. Website tracking was initially going to be the behavior measure, however, it was decided the true behavior was whether or not the respondent actually went to the available site, just like page views are tracked with all websites. In this case, then, the yes or no question is logically sufficient. A total of 437 usable subjects were analyzed (n= 219 Allergy group and n= 218 Oral Contraceptive group) to test the following hypotheses:

1. To what extent does the behavioral measure correlate with the intentions reported?
2. To what extent does a higher intent affect behavior?
3. To what extent do the aforementioned measures change based on ad type or demographic data?

Results

Demographic statistics are listed in Table 1 by group. Given the internet panel sampling medium, the overall subject group was relatively young (58.9% between 18 & 35) and well educated (62.7% with at least some college or higher). Within the allergy group, there were more male subjects (56.2%) and a more even distribution of ages. In terms of the scales, high

internal consistency was observed. Coefficient alphas reported were: D_{II} -Seek = 0.949, D_{II} -Discuss = 0.966, D_{II} -Ask = 0.970.

Across all data and ad types, consumers expressed a moderate likelihood to seek more information about the medication/disease state (D_{II} -Seek Mean = 4.49 ± 1.75), discuss it with their physician (D_{II} -Discuss Mean = 4.70 ± 1.76) and ask for a prescription for the product/disease state (D_{II} -Ask Mean = 4.43 ± 1.87). A composite of the three scales yielded an overall intent mean of 4.53 ± 1.66 . Further, consumers were moderately likely to seek more information when asked based on a 0-100 scale (Mean = 60.84 ± 27.97). Demographic comparisons were run, however, no differences were seen with intent measures and either age, gender or education level.

Descriptive statistics, analysis of variance, and chi-square techniques were used to analyze the behavior measure. Of the 437 subjects, only 96 (22 percent) chose yes, wanting to be taken to more information about the medication/disease state. A significant negative correlation was observed between this response and the composite intent measure (Pearson $r = -0.358$) and rating scale intent measure (Pearson $r = -0.327$). The measure was then compared to the intent variables. For the subjects choosing yes, all intention variables were significantly higher ($p < 0.001$).

Two by two contingency tables were created for chi-square analysis of intent (divided into high and low based on a score of five or greater on the 7-point scale) and the actual behavior. Intentions and behavior were found to be dependent with a significant chi-square (45.76, $p < 0.001$). Cross-tabulation data is presented in Table 3. Of the respondents with low intent measures (<5 on 7 point scale with composite intent measure), only 10.2 percent (25/246)

engaged in the behavior. However, of the high intent consumers, 37.2 percent (71/191) engaged in the behavior. This effect was also true for the scalar measure (D_{II} -Likelihood). The measure was divided into high (> 50 on the 100 point scale) and low (≤ 50) likelihood of seeking more information, with 368 responses and 69 non-responses. Again, those with a higher likelihood of seeking information (74/220, 33.6 percent) performed the actual behavior significantly more (chi-square = 28.43, $p < 0.001$). This cross-tabulation is presented in Table 4. Lastly, the comparison of branded and non-brand ads on the behavioral measure was not significant.

Discussion

Overall, an ad type inducing 22 percent of a population to respond and seek more information can be very beneficial for pharmaceutical manufacturers. For example, if the target disease population consisted of 500,000 people, these findings suggest approximately 110,000 of the target population would seek more information about the medication/disease state. Also, for those wanting to see more information about the medication/disease state, all intent measures were significantly greater. Conversely, almost four times as many high intent consumers, percentage wise, engaged in the actual behavior. This is further conformation these advertisements achieve their goal and induce information seeking and discussions with physicians.

Examining the primary research question, behavioral intentions did not correlate with actual behavior, even though individual scale and composite intent measures showed moderate likelihood of drug inquiry. On the surface, the overall descriptive results do not follow the “mere-measurement” effect or Ajzen’s model presented earlier. One possible explanation is the nature of the pharmaceutical market. The effect has been previously investigated in the area of

consumer goods, such as a personal computer or an automobile (Morwitz 1993). In these markets, consumers can directly purchase the product without the regulations/dynamics of the pharmaceutical market. One must receive a prescription from a physician in order to purchase a medication. Therefore, behavioral actions could possibly be tempered as consumers are aware a physician visit and subsequent prescription is necessary. Another factor is possibly is the time between the intent and actual behavioral measures. Intent scales were sequenced nine single-response questions ahead of the behavioral measure, leaving very little time for subjects to process the information.

However, further examination showed those with more positive intention measures and those with a higher likelihood of seeking information were significantly more apt to actually search for information. These findings follow both theoretical backgrounds in that greater intent led to increased behavior. From the pharmaceutical industry's perspective, the question then becomes how to induce more drug inquiry. Working backwards on the TpB, the three constructs preceding intentions are attitude toward the behavior, subjective norms and perceived behavioral control. Following this theory, pharmaceutical advertisers must engage consumers and create more positive attitudes toward drug inquiry, make it a commonly accepted behavior, and empower consumers with information and confidence to speak with their physician.

Limitations of this report focus on the behavior measure. A dichotomous, single-item response was chosen as compared to multiple measures or physically observing behavior. This was also a single exposure to a prescription ad.

Conclusions

Overall, behavioral intentions did not correlate with actual behavior. Further examination revealed those with higher intent performed the actual behavior significantly more. Future research should compare intentions and behavior in this setting to that of consumer goods, or even over-the-counter medications, as a direct test of the mere-measurement theory. Also, full website tracking/monitoring could be employed to more extensively capture actual behavior.

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TABLE 1 – Demographics

	<u>Allergy Group</u> <u>(n = 219)</u>	<u>Oral Contraceptive Group</u> <u>(n=218)</u>
<u>A. GENDER</u>		
Males	123 (56.2%)	0
Females	96 (43.8%)	218
<u>B. EDUCATION</u>		
< High School Graduate	8 (3.7%)	9 (4.1%)
High School Grad or Equiv.	45 (20.5%)	49 (22.5%)
Assoc./Tech/Voc. Degree	25 (11.4%)	27 (12.4%)
Some College, No Degree	56 (25.6%)	76 (34.9%)
College Degree	57 (26.0%)	48 (22.0%)
Grad. School or Higher	28 (12.8%)	9 (4.1%)
<u>C. AGE</u>		
18 – 25	63 (28.8%)	88 (40.4%)
26 – 35	46 (21.0%)	60 (27.5%)
36 – 45	33 (15.1%)	52 (23.9%)
46 – 55	34 (15.5%)	18 (8.3%)
Over 55	43 (19.6%)	0

TABLE 2 – Scale Reliability

<u>Construct</u>	<u>Reliability Estimates (Coefficient Alpha)</u>
<u>Involvement</u>	0.896
<u>Attitude Toward the Ad</u>	0.957
<u>Attitude Toward the Company</u>	0.972
<u>Attitude Toward the Industry</u>	0.980
<u>Drug Inquiry Intent – Seek</u>	0.949
<u>Drug Inquiry Intent – Discuss</u>	0.966
<u>Drug Inquiry Intent – Ask</u>	0.970

TABLE 3 – CROSS-TABULATIONS

Intent vs. Behavior

Intent Divided into High or Low * Behavior Cross-Tabulation

		BEHAVIOR		
		YES	NO	TOTAL
INTENT	1 – LOW	25	221	246
	2 – HIGH	71	120	191
	TOTAL	96	341	437

Pearson Chi-Square = 45.76 p < 0.001

TABLE 4 – CROSS-TABULATIONS

Likelihood of Seeking More Information vs. Behavior

D₁₁ -Likelihood Divided into High or Low * Behavior Cross-tabulation

		BEHAVIOR		
		YES	NO	TOTAL
LIKELIHOOD OF SEEKING	LOW	14	134	148
MORE INFORMATION	HIGH	74	146	220
	TOTAL	88	280	368

Pearson Chi-Square = 28.43 p < 0.0001

APPENDIX A – Branded Ad 1



Only Oral Contraceptive with **3** indications

- o Prevention of Pregnancy
- o 99% Effective when used correctly
- o Treatment of emotional & physical premenstrual symptoms severe enough to impact women's lives
- o Treatment of moderate acne

Anerim[®] is the #1 brand of OC among OB/GYNs and Dermatologists

C&C
Pharmaceuticals, Inc.

IMPORTANT SAFETY INFORMATION

Anerim contains 3-mg of the progestin drospirenone that has AntiMineralocorticoid activity, including the potential for hyperkalemia in high-risk patients, comparable to a 25-mg dose of spironolactone.

Anerim should not be used in patients with conditions that predispose to hyperkalemia (i.e. renal insufficiency, hepatic dysfunction and adrenal insufficiency). Women receiving daily, long-term treatment for chronic conditions or diseases with medications that may increase serum potassium should have their serum potassium levels checked during the first treatment cycle.

Medications that may increase serum potassium include ACE inhibitors, angiotensin-II receptor antagonists, potassium-sparing diuretics, potassium supplementation, heparin, aldosterone antagonists, and NSAIDs.

The following are the most common adverse events reported with use of Anerim during the clinical trials, occurring in >1% of subjects and which may or may not be drug-related: headache, menstrual disorder, breast pain, abdominal pain, nausea, leucorrhea, flu syndrome, acne, vaginal moniliasis, depression, diarrhea, asthenia, dysmenorrhea, back pain, infection, pharyngitis, intermenstrual bleeding, migraine, vomiting, dizziness, nervousness, vaginitis, sinusitis, cystitis, bronchitis, gastroenteritis, allergic reaction, urinary tract infection, pruritus, emotional lability, surgery, rash, upper respiratory infection.

Patients should be counseled that OCs do not protect against HIV infection and other sexually transmitted diseases. The use of oral contraceptives is associated with increased risks of several serious conditions including venous and arterial thrombotic and thromboembolic events (such as myocardial infarction, thromboembolism and stroke), hepatic neoplasia, gallbladder disease, and hypertension. **Cigarette smoking increase the risk of serious cardiovascular side effects; women who take OCs are strongly advised not to smoke.**

Visit www.anerim.com for more information.

Anerim[®]
drospirenone & ethinyl estradiol

APPENDIX B – Branded Ad 2

ALLERGONE relieves your most frustrating allergy symptom: congestion.

ALLERGONE provides powerful relief of congestion and other seasonal allergy symptoms such as sneezing, runny nose, itchy nose, palate, and throat, and itchy, watery, red eyes. This unique antihistamine/decongestant combination works for a full 24 hours, so you get symptom relief all day AND all night—with just one convenient dose.

Stuffy nose making you frustrated?
Then talk to your doctor about ALLERGONE—the #1 prescribed antihistamine plus decongestant.

ALLERGONE is also nondrowsy and has no FDA label precautions regarding activities requiring mental alertness, like driving. Additionally, ALLERGONE comes in a small tablet that's easy to swallow.

Join the extras program @ www.allergone.com

ALLERGONE Extended-Release Tablets are indicated for the relief of symptoms associated with seasonal allergic rhinitis in adults and children 12 years of age and older. Symptoms treated effectively include sneezing, rhinorrhea, itchy nose/palate/ and/or throat, itchy/watery/red eyes, and nasal congestion.

ALLERGONE should be administered when both the antihistaminic properties of levocetirizine hydrochloride and the nasal decongestant properties of pseudoephedrine hydrochloride are desired.

CONTRAINDICATIONS
ALLERGONE is contraindicated in patients with known hypersensitivity to any of its ingredients.

Due to its pseudoephedrine component, ALLERGONE is contraindicated in patients with narrow-angle glaucoma or urinary retention, and in patients receiving monoamine oxidase (MAO) inhibitor therapy or within fourteen (14) days of stopping such treatment (see Drug Interactions section). It is also contraindicated in patients with severe hypertension, or severe coronary artery disease, and in those who have shown idiosyncrasy to its components, to adrenergic agents, or in other drugs of similar chemical structures. Manifestations of patient idiosyncrasy to adrenergic agents include: insomnia, dizziness, weakness, tremor, or arrhythmias.

WARNINGS
Sympathomimetic amines should be used with caution in patients with hypertension, diabetes mellitus, ischemic heart disease, increased intraocular pressure, hyperthyroidism, renal impairment, or prostatic hypertrophy. Sympathomimetic amines may produce central nervous system stimulation with convulsions or cardiovascular collapse with accompanying hypotension.

PRECAUTIONS
General
Patients with decreased renal function should be given a lower initial dose (one tablet per day) because they have reduced elimination of levocetirizine and pseudoephedrine.

Information for Patients
Patients taking ALLERGONE tablets should receive the following information: ALLERGONE tablets are prescribed for the relief of symptoms of seasonal allergic rhinitis. Patients should be instructed to take ALLERGONE tablets only as prescribed. Do not exceed the recommended dose. If nervousness, dizziness, or sleeplessness occur, discontinue use and consult the doctor. Patients should also be advised against the concurrent use of ALLERGONE tablets with over-the-counter antihistamines and decongestants.

The product should not be used by patients who are hypersensitive to it or to any of its ingredients. Due to its pseudoephedrine component, this product should not be used by patients with narrow-angle glaucoma, urinary retention, or by patients receiving a monoamine oxidase (MAO) inhibitor or within 14 days of stopping use of MAO inhibitor. It also should not be used by patients with severe hypertension or severe coronary artery disease.

Patients should be told that this product should be used in pregnancy or lactation only if the potential benefit justifies the potential risk to the fetus or nursing infant. Patients should be advised to take the tablet on an empty stomach with water. Patients should be directed to swallow the tablet whole. Patients should be cautioned not to break or chew the tablet. Patients should also be instructed to store the medication in a tightly closed container in a cool, dry place, away from children.

Patients should be told that the inactive ingredients may occasionally be eliminated in the feces in a form that may resemble the original tablet.

DAB
PHARMACEUTICALS, INC.

APPENDIX C – Non-Branded Ad 1



oral contraceptives may also help with:

- Acne
- Depression
- Weight Gain
- Severe Menstrual Cramps

The choice of an oral contraceptive should be individualized for each woman. Call with any questions or visit the website for more information about finding which oral contraceptive is right for you.

Oral contraceptives employ synthetic hormones that mimic the properties of natural estrogens and/or progesterone to "fool" the female reproductive system. They provide constant levels of an estrogen and/or progestin in the blood, which inhibits maturation of an egg in an ovary & release of an egg from the ovary. In addition to the inhibition of ovulation, the constant level of an estrogen and progestin in the body prevents attachment of the egg. Progestins also promote production of thick, opaque mucus, which acts as a barrier to sperm. Estrogen and progestin may also alter the pattern of muscle contractions in the uterus and interfere with implantation. In case ovulation does occur, which is rare but can happen, these additional effects also help to prevent pregnancies.

1-877-THE-PILL or www.ocinfo.com



APPENDIX D – Non-Branded Ad 2



PRESCRIPTION MEDICATIONS CAN TREAT ALLERGIES OR CONGESTION RELATED TO:

- Pollen
- Pet Dander
- Dust Mites
- Multitudes of other indoor & outdoor allergens

SNEEZING? RUNNY NOSE?
ITCHY EYES? CONGESTION?

Medication can help.

If you have symptoms of seasonal allergies, talk to your doctor. Medications have been proven to provide powerful relief of the wide range of symptoms including sneezing, congestion, sinus pressure, runny nose, itchy nose, palate, and throat, and itchy, watery, red eyes.

WHAT IS ALLERGIC RHINITIS?

Allergic rhinitis, often called allergies or hay fever, occurs when your immune system overreacts to particles in the air that you breathe-you are allergic to them. Your immune system attacks the particles in your body, causing symptoms such as sneezing and a runny nose. The particles are called allergens, which simply means they can cause an allergic reaction.

People with allergies usually have symptoms for many years. You may have symptoms often during the year, or just at certain times. You also may get other problems such as sinusitis and ear infections as a result of your allergies.

1-877-BREATHE
or
WWW.BREATHEEASY.COM


DAB
PHARMACEUTICALS, INC.