

RELATIONSHIP BETWEEN TYPE OF ENDORSER AND PATIENTS' ATTITUDES
AND BEHAVIORS IN DIRECT TO CONSUMER ADVERTISEMENT

by

Rana A. Salman

JIM MIRABELLA, D.B.A., Faculty Mentor and Chair

RICHARD MURPHY, D.B.A., Committee Member

LIZA STAVCHANSKY LEWIS, Ph.D., Visiting Scholar Committee Member

Kurt Linberg, Ph.D., Dean, School of Business & Technology

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

Capella University

12-22-2008

© Rana Salman, 2008

Abstract

The study identified whether there was a difference in responses toward a prescription drug ad based on endorser type. The study accessed allergy patients through an allergy clinic. About 204 patients took part in the study. Each of these patients was randomly assigned to one of the endorser groups (expert, typical consumer, and celebrity group) or to the control group. The study used four fictitious ads that featured the same fictitious allergy prescription medication. The ads looked the same except for the type of endorser. After evaluating one of the ads, the patients took a quick survey. The survey evaluated the patient's attitude toward the ad, the patient's attitude toward the drug in the ad, the patient's likelihood of asking the doctor for more information about the drug in the ad, and the patient's likelihood of asking the doctor to prescribe the drug in the ad. Findings revealed no significance differences in responses toward the prescription allergy medication print ad based on endorser type and therefore did not confirm the theory of endorser effectiveness. This was the first study to compare and contrast the use of different types of endorsers in direct to consumer advertisements (DTCAs) of prescription drugs. Future research could use these findings and test this study further by administering the survey to allergy patient in a non-clinical setting, by using different types of patients (those that have allergies, and those that do not), by using the television medium when evaluating responses based on endorser type, and by using different classes of medications when evaluating responses based on endorser type.

Dedication

To my husband, Ghassan and my two little boys, Samer and Zane. For persevering through the storm with love, triumph, and a smile.

Acknowledgments

This has been a lifelong dream that I could not have accomplished without the help and support of many people in my lives. Throughout this journey, I have met incredible individuals that have believed in me, challenged me, and brought out the best in me.

I would first like to thank the chair of my committee, Dr. Jim Mirabella for his guidance and commitment. Thank you for your toughness, for your compassion, and for your promptness. Thank you for your encouragement, for your sense of humor, and for your patience. Finally, thank you for believing in me.

For my committee members, Dr. Richard Murphy and Dr. Liza Stavchansky Lewis. Thank you for taking part in this journey. Your feedback and comments have helped me become a better researcher.

For the physicians that allowed me access to their clinic, I am forever indebted to you. Without your help, I couldn't have completed my study. Thank you for opening your doors and believing in me.

For the office staff at the clinic, I thank you for your hospitality, for your support, and for your kindness. For all the patients that took the survey, I thank you for taking the time to complete the survey, for providing me input, and for making me a better person. I have learned so much from all of you.

For my mom and dad, thank you for all the sacrifices that you made to raise us in this beautiful country. I will always remember all the struggles that you went through, leaving your homeland to give us an opportunity to be whatever we want to be. This is your victory.

For my husband, my sweet Ghassan. I can't thank you enough. When I first met you, I told you that my dream is to get my Ph.D. You held my hand and assured me that we'll get there. Years later, we are here. You have been my cheerleader, my best friend, and my everything. Thank you for your patience, for your sacrifices, and for your support. Thank you for the late nights, for the encouragement, and for the love that you bring me.

For my two little boys, Samer and Zane. Without you, I couldn't have done it. When I was overwhelmed, I looked at your big brown eyes, and couldn't bear disappointing you. You are my two little heroes, my best accomplishments, and my conscious. Thank you for being my angels.

Table of Contents

Acknowledgments	iii
List of Tables	viii
CHAPTER 1. INTRODUCTION	
Introduction to the Problem	1
Background of the Study	2
Statement of the Problem	5
Purpose of the Study	6
Research Questions	7
Significance of the Study	8
Definition of Terms	9
Assumptions and Limitations	10
Nature of the Study	12
Organization of the Remainder of the Study	13
CHAPTER 2: LITERATURE REVIEW	
History of Direct To Consumer Advertisements	14
Use of Different Types of Endorsers	21
Match-up Hypothesis	22
Theory of Endorser Effectiveness	29
Elaboration Likelihood Model	53
Recent Studies and Theory of Endorser Effectiveness	54
Conclusion	59
CHAPTER 3. METHODOLOGY	

Research Questions	60
Null Hypotheses	60
Research Design	61
Sample	62
Ad/Instrumentation	70
Data Collection	76
Treatment/Intervention	77
Data Analysis	79
Validity	79
Reliability	81
Ethical Considerations	82
Summary	83
CHAPTER 4. RESULTS	
Demographics	85
Results	86
CHAPTER 5. DISCUSSION, IMPLICATIONS, RECOMMENDATIONS	
Statement of the Problem	99
Research Questions and Hypotheses	101
Review of the Methodology	102
Summary of the Results	104
Discussion	105
REFERENCES	113
APPENDIX A. Ads	125

APPENDIX B. Surveys	126
APPENDIX C. Script Used When Approaching Patient	130
APPENDIX D. Debriefing Letter	131

List of Tables

Table 1. Type of Endorser * Gender Descriptive Statistics	85
Table 2. Allergy Shot Patients Descriptive Statistics	86
Table 3. Cross tabulation for H1a	87
Table 4. Chi Square Test for H1a	88
Table 5. Crosstabulation for H1b	89
Table 6. Chi Square Test for H1b	89
Table 7. Crosstabulation for H1c	90
Table 8. Chi Square Test for H1c	90
Table 9. Crosstabulation for H1d	91
Table 10. Chi Square Test for H1d	92
Table 11. Crosstabulation for H1e	93
Table 12. Chi Square Test for H1e	93
Table 13. Crosstabulation for H2	94
Table 14. Chi Square Test for H2	95
Table 15. Crosstabulation for H3	96
Table 16. Chi Square Test for H3	96
Table 17. Crosstabulation for H4	97
Table 18. Chi Square Test for H4	98

CHAPTER 1. INTRODUCTION

Introduction to the Problem

Between 1989 and 2007, spending on direct to consumer advertisement (DTCA) of prescription drugs has increased from \$12 million in 1989 (Calfee, 2002) to \$4.4 billion in 2007 (Choi & Lee, 2007). Some believe this continuous increase in DTCA spending has influenced prescription drug sales (National Institute for Health Care Management [NIHCM], 2002). The National Institute for Health Care (NIHCM) reported that between 1999 and 2000, prescription drug sales increased from \$111.1 billion to \$131.9 billion, with the 50 most heavily advertised drugs accounting for 47.8% of the increase (NIHCM, 2002).

Pharmaceutical companies have used different approaches to make DTCA effective. One of these approaches is the use of different types of endorsers (i.e., celebrities, experts, and typical consumers) in the ads; in fact, 7 of the 11 best selling and most heavily advertised prescription drugs in the Year 2000 either have used or are currently using endorsers in their DTCAs (Arnold, 2005; Fillon, 2006; Johnsen, 2004; NIHCM, 2002; Peebles, 2003; Pepep, 2004). Some of these endorsers are former senator, Bob Dole, endorsing Viagra (Pepep, 2004), actress, Sally Field, endorsing Boniva (Arnold, 2006), figure skater, Dorothy Hamill, endorsing Vioxx (Arnold, 2005), and expert endorser Dr. Robert Jarvik endorsing Lipitor (“Dr. Jarvik,” 2008). This study attempted to identify whether there was a difference in responses toward a prescription drug ad based on endorser type.

This study is important because no one has ever compared and contrasted the use of different kinds of endorsers in DTCAs. With more and more pharmaceutical companies using different types of endorsers, it is important to understand if consumers react to them differently. This is, especially important since more and more patients are proactively asking their physicians about the advertised drugs (Choi & Lee, 2007), and more physicians are prescribing the requested drugs (Peyrot, Alperstein, Van Doren, & Poli, 1998).

Background of the Study

In 1977, Hershey Friedman, a Ph.D. student embarked on a study to determine if there was a correlation between different types of endorsers and specific product types (Friedman, 1977). Friedman identified three types of endorsers: celebrities, experts, and typical consumers. Using the literature about consumers' perceived risks and the social influence theory, Friedman hypothesized that certain endorsers reduced certain types of risks and this, in turn, increased the likelihood of influence. According to Friedman, an expert endorser is the most effective endorser for products that are high in physical, performance, and/or financial risks. A celebrity endorser is the most effective endorser for products that are high in social and psychological risks, or both. A typical consumer endorser is the most effective endorser for products that carry few risks (Friedman, 1977).

To test his hypotheses, Friedman (1977) used three different products (i.e., vacuum cleaner, costume jewelry, and a bag of cookies) and three different types of endorsers (i.e., expert, celebrity, and typical consumer). Each of the products carried

certain risks. The vacuum cleaner was high in physical, performance, and financial risks; the costume jewelry was high in social and psychological risks; and the bag of cookies carried very few risks. After conducting statistical testing, Friedman found a significant difference in responses toward different products based on endorser type. He specifically found that the expert endorser was the most influential endorser for the vacuum cleaner, the celebrity endorser was the most influential endorser for the costume jewelry, and the typical consumer was the most influential endorser for the bag of cookies. Friedman summarized his findings in a new theory called the theory of endorser effectiveness.

Even though Friedman (1977) was the founder of the theory of endorser effectiveness, several researchers before him have stumbled across surprising findings that supported his theory (e.g., Brock, 1965; Crisci & Kassinove, 1973; Settle, 1972; Woodside & Davenport, 1974). For example, part of Woodside and Davenport's study evaluated the influence of an expert saleswoman versus a typical consumer saleswoman on the customers' purchasing behavior of a complex technology product. As the theory of endorser effectiveness predicted, since the complex technology product was high in financial, performance, and physical risks, findings revealed that there was a difference in responses toward the complex technology product based on endorser type. In fact, the expert saleswoman ended up selling more of the new product than the typical consumer saleswoman (Woodside & Davenport, 1974).

After Friedman (1977) published his findings, he and other researchers conducted several studies to evaluate the theory of endorser effectiveness (e.g., Atkin & Block, 1983; Fireworker & Friedman, 1977; Freiden, 1982, 1984; Friedman, Termini, & Washington, 1979; Kerin & Barry, 1981; Lipscomb, 1985; Rubin, Mager, & Friedman,

1982). Most of these studies supported the theory. None of them, however, evaluated whether there was a difference in responses toward a prescription drug ad based on endorser type.

Lipscomb (1985) came closest to studying this topic. Her thesis evaluated which type of endorsers most influenced consumers' intent to purchase over the counter (OTC) medications. She used a 5 x 4 factorial design, which included five different types of endorser categories (physician, pharmacist, physician and pharmacist, celebrity, typical consumer) and four different OTC medications (headache medicine, cough and cold medicine, anti-diarrhea medicine, and itch and rash medicine).

Using Friedman's theory of endorser effectiveness, Lipscomb (1985) hypothesized that since OTC medications are high in physical risks, the expert endorsers would be the most successful in influencing consumers to purchase any OTC medications. Upon administering the survey and conducting her analysis, Lipscomb's findings supported her hypothesis.

Unlike the use of endorsers in OTC medications, the use of endorsers in DTCA is controversial. Some claim that using actors and celebrity endorsers in DTCA is deceptive ("Testimony of Gary Ruskin," 2005). This is because some celebrities have endorsed a prescription drug they never used. Some have actually used the drug and told the public about it, but did not disclose that they were getting paid to endorse it ("Testimony of Gary Ruskin," 2005). In addition to celebrity endorsers, critics have condemned the use of expert endorsers, claiming that expert endorsers could mislead the public. They used Robert Jarvik, the expert endorser of Lipitor, to explain their findings. Jarvik deceived people because he positioned himself as an expert physician when in reality he was not

(“Statement of the Honorable Bart Stupak,” 2008). He never practiced medicine, and he did not take Lipitor until he endorsed it (“Dr. Jarvik,” 2008; House Committee on Energy and Commerce, 2008). Even with all of the controversies surrounding the use of endorsers in DTCAs, no studies have actually investigated the relationship between the type of endorser and the patients’ attitudes and behaviors toward DTCA of prescription drugs. This study attempted to do that by using actual adult patients in a real clinical setting.

Statement of the Problem

In 2006, Pfizer hired Robert Jarvik to endorse its new cholesterol lowering drug, Lipitor (“Dr. Jarvik,” 2008). In the ads, Pfizer positioned Jarvik as an expert, by introducing him as a physician and the inventor of the Jarvik artificial heart. Pfizer paid Jarvik \$1.35 million for a 2-year-contract and spent \$2.58 million on the Lipitor ad campaign that featured him. The campaign was a success; in fact, some have claimed that the campaign helped make Lipitor the number one selling prescription drug in the world (Hirsh, 2008).

Pfizer’s use of Jarvik as an endorser came under scrutiny with accusations of deception. Jarvik was not a practicing physician, but the ads depicted him as one (“Dr. Jarvik,” 2008). The House Committee on Energy and Commerce’s Subcommittee on Oversight and Investigations investigated Pfizer’s misleading claims. Subsequently, Pfizer discontinued airing the ads (“Dr. Jarvik,” 2008).

Even though Pfizer stopped using Jarvik as its endorser, it had already profited from his expertise. In 2000, *Consumer Reports* conducted a study to evaluate Jarvik’s

effectiveness. The study found that out of the 978 participants who viewed the ad, 48% had favorable impressions toward Lipitor, and nearly 67% kept taking Lipitor because of Jarvik's endorsement ("Cholesterol Drugs," 2008). Could it be that there was a relationship between using Jarvik as an endorser and patients' favorable attitudes and behaviors toward Lipitor? Would this relationship be the same if the ads did not use an expert endorser but used a celebrity endorser, or a typical consumer, or no endorser?

It is important to find answers to these types of questions. If there is a difference in patients' behaviors and attitudes toward DTCA of a prescription drug based on the endorser type, and if physician endorsers elicit more favorable reactions from patients than the other type of endorsers, then a problem arises if physician endorsers are presented in a deceptive manner because they could ultimately hurt the patient and add unnecessary medical costs.

Purpose of the Study

The purpose of this study was to identify whether there were differences in responses toward a prescription drug ad based on endorser type. While there have been many studies that have evaluated the effectiveness of different types of endorsers on different types of products, none of them have specifically evaluated if such a difference existed when using an ad that promoted a prescription drug. As more and more pharmaceutical companies use different types of endorsers, it is imperative to understand how consumers react to them. For example, if there are no differences between using a typical consumer versus a celebrity endorser in DTCA of prescription drugs, then

pharmaceutical companies do not need to spend a large amount of money to hire a celebrity when a typical consumer might be as effective.

Research Questions

The study identified whether there was a difference in responses toward a prescription drug ad based on endorser type. The independent variables were the different types of endorsers (expert, celebrity, and typical consumer) and the control group. The dependent variables were attitudes toward the ad, attitudes toward the allergy drug in the ad, intentions to ask a doctor for more information about the advertised allergy drug, and intentions to ask a doctor to prescribe the advertised allergy drug. The research questions attempted to evaluate if there was a relationship between the independent and dependent variables.

Research Question 1: Is there a relationship between the type of endorsement used in a prescription drug ad and ones attitudes toward the ads?

Research Question 2: Is there a relationship between the type of endorsement used in a prescription drug ad and ones attitude toward the advertised drug?

Research Question 3: Is there a relationship between the type of endorsement used in a prescription drug ad and ones likelihood of asking their physician for more information about the drug in the ad?

Research Question 4: Is there a relationship between the type of endorsement used in the prescription drug ad and ones likelihood of asking their physician to prescribe the drug in ad?

Significance of the Study

As noted in the earlier section, pharmaceutical companies are increasingly using endorsers to promote their new prescription drugs. Some of these endorsers are celebrities, some are typical consumers, and some are experts. No study has specifically evaluated whether there is a difference in responses toward a prescription drug ad based on endorser type. This, alone, makes the study significant. According to Glatthorn and Joyner (2005), a study is significant if “the methods you have chosen for the study have not been widely used in your profession, and your study will likely yield some useful methodological findings” (p. 160).

The findings of the study are significant to the pharmaceutical industry and to consumers. Pharmaceutical companies can use these findings to develop more effective endorser type ads. For example, if findings reveal no difference among the different types of endorsers on the respondents’ attitudes and behaviors, then pharmaceutical companies need to re-consider who they hire as their endorsers. Is it worth spending millions of dollars to hire a celebrity when a typical consumer endorser might be as effective? On the other hand, if findings reveal that such a difference exists, then pharmaceutical companies could use this information to effectively select different types of endorsers.

These findings would also be significant to consumers by helping them become more cognizant when viewing or listening to DTCAs that feature different types of endorsers. If the study’s findings reveal that there is a difference in responses toward a prescription drug ad based on endorser type, then the FDA could team up with patient advocacy groups and educate consumers about the possible influence of these different types of endorsers. The FDA and the patient advocacy groups could then encourage

consumers to evaluate the effectiveness of the drug in DTCA by investigating the merit of the ad's message instead of trusting the different types of endorsers.

Definition of Terms

Celebrity endorsers. Famous people who endorse products that they are not known for (Fireworker & Friedman, 1977).

Expert endorsers. Professionals that have superior knowledge on the products they are endorsing (Fireworker & Friedman, 1977).

Financial risk. "The chance of wasting money on the product because it does not work properly or because it costs more than it should to keep it in good shape" (Friedman, 1977, p. 148).

Performance risk. "The chance that the product will not work as expected" (Friedman, 1977, p. 148).

Physical risk. "The chance that the product will not be safe, and may be harmful or injurious" (Friedman, 1977, p. 148).

Psychological risk. "The chance that the product will not fit in well with the way you think of yourself, your self image" (Friedman, 1977, p. 148).

Social risk. "The chance that the product will affect the way others think of you, and make them think less of you, or even laugh at you" (Friedman, 1977, p. 148).

Typical consumer endorsers. Individuals that are not famous, but that use the products they are endorsing (Fireworker & Friedman, 1977).

Assumptions and Limitations

This study identified whether there was a difference in responses toward a prescription drug ad based on endorser type. Each patient was randomly assigned to different types of endorser groups (i.e., expert, celebrity, and typical consumer). Each of these patients either looked at an ad with a specific treatment or at an ad with no treatment. They then filled out a survey. There are several assumptions and limitations pertaining to this study.

The researcher assumed the patients that visited the allergy clinic suffered from allergies. The researcher also assumed the patients perceived that the ad and the prescription allergy drug were real. This is important because the researcher wanted to get the patients' real attitudes and behaviors toward the ad. By using a fictitious drug, the patients' responses were not based on past experiences with the drug. That eliminated biases the respondents might have had toward an already known drug.

The study had several limitations pertaining to the sample's demographics, the type of sample, the data collection location, and the type of ad used. The study was conducted in an allergy clinic that is located in a southern city in the United States. One might argue that the types of patients in one city are not representative of the different types of patients in the United States. However, it is important to note that the city where the study was administered is diverse (U.S. Census Bureau, 2006). Compared to the United State's population, in 2006, the city had 15% fewer Caucasians, 4% fewer African Americans, 18% more of other races, 21% more Hispanics, and 1.1% more Asians. In addition, the city had 52% male residents and 48% female residents (U.S. Census Bureau,

2006). These statistics indicate there was potentials of attracting different types of patients to the study.

To attract different types of patients to the study, the study used an ad for an allergy prescription medication. As noted above, the ad was evaluated by allergy patients. According to the American Academy of Allergy, Asthma and Immunology (n.d.), allergy ranks as the sixth chronic disease in the United States. About half of the American public suffer from allergies (Matricardi, Rosmini, Panetta, Ferrigno, & Bonini, 2002), and about 20 million Americans suffer from asthma (Asthma and Allergy Foundation of America [AAFA], 2005). Many of them live in the city where the study took place. In fact, a year ago, the Asthma and Allergy Foundation of America ranked the city as one of the worst cities in the nation to live in during the fall allergies (AAFA, 2007). These results were based on the high pollen levels, a tremendous increase in prescribing allergy medications, and the low number of board certified allergists in the city (AAFA, 2007). During the fall season, the city has high levels of mold, ragweed, and cedar elm allergies. Since the study took place in the fall, it included different types of patients who suffered from different types of allergies.

The second limitation had to do with the type of respondents that were used in the study. They were adult patients that suffer from allergies, so the allergy topic is important to them. Therefore, their responses to the prescription allergy ad might be different than those who do not have any allergies.

The third limitation was the physical location where the study took place. The study was limited to allergy patients who were already at the doctor's office. These patients' mindsets were on their health. Their responses to the prescription allergy ad

might be different than patients who have allergies but were not viewing the ad in a clinical setting.

The fourth limitation was related to the type of ad that was used in the study. The study used print ads. The findings might be different if the study used television or radio ads, which means that the findings from this study might be limited to only print ads.

Future researchers could deal with these limitations by conducting the same study in different states. This would determine if the findings are similar in different areas in the United States. The survey could also be administered to allergy and non-allergy patients in a non-clinical setting. Finally, future researchers could also conduct the same study using a different media channel, such as television and compare their findings to this study.

Nature of the Study

The study used a correlational research methodology. The goal of the study was to identify whether there was a difference in responses toward a prescription drug ad based on endorser type. To reach that goal, the study used purposive sampling and randomly assigned adult patients in an allergy clinic to either one of the three different treatment groups (the expert, celebrity, and typical consumer) or to the one control group (no endorser).

After the patients were assigned to a specific ad group, they took a short survey that measured their attitudes toward the ad, attitudes toward the allergy drug in the ad, intentions to ask a doctor for more information about the advertised allergy drug, and

intentions to ask a doctor to prescribe the advertised allergy drug. The survey also included some demographic questions.

Organization of the Remainder of the Study

Chapter 2 of this dissertation is a literature review of the theories and studies that evaluated whether there was a difference in responses toward different type of products based on endorser type. It also includes a brief overview of the history of DTCA. Chapter 3 contains a detailed description of the research design and methodology. Chapter 4 offers a discussion of the findings, and Chapter 5 includes an overview of the study and an in depth discussion of the findings, which includes an interpretation section of the findings, practical implications, and recommendations for future research.

CHAPTER 2. LITERATURE REVIEW

The following chapter provides a comprehensive look at DTCA of prescription drugs and the relationship between endorser types and consumers' attitudes and behaviors toward different products. The chapter starts with a summary of the history of DTCA, including FDA's regulations, DTCA spending, and consumers' and physicians' attitudes toward DTCA. The remainder of the chapter focuses on the different types of endorsers used in DTCA, the match-up hypothesis, and the theory of endorser effectiveness. These sections are detailed since they cover all the literature related to product-endorser type interactions. In addition, this chapter includes a brief section about the elaboration likelihood model.

History of Direct To Consumer Advertisement

Definition

The World Health Organization defines drug promotion as “all informational and persuasive activities by manufacturers and distributors, the effect of which is to induce the prescription, supply, purchase, and or use of medicinal drugs” (World Health Organization, 1986, p. 2). In DTCA of prescription drugs, the pharmaceutical companies promote prescription drugs directly to consumers through different media channels, such as magazines, newspapers, radio, internet, and television (Diehl, Mueller, & Terlutter, 2008).

How it All Started

The concept of promoting drugs directly to consumers dates back to 1708, when Nicholas Boone advertised the first patented drug in a newspaper (Wilkes, Bell, & Kravitz, 2000). Boone's advertisement opened the door for others to promote their patented drugs through print advertisement (Wilkes et al., 2000). Since this advertising practice became popular, the government passed legislations to regulate it (Gellad & Lyles, 2007). One of these legislations was the Federal Food, Drug, and Cosmetic Act (FDCA).

Passed by Congress in 1938, the FDCA required that prescription drugs and OTC medications be safe (Gellad & Lyles, 2007). Each drug was required to have labels, so that consumers were aware of its side effects (Gellad & Lyles, 2007). Congress placed the U.S. Food and Drug Administration (FDA) in charge of overseeing drug labeling (Wilkes et al., 2000). The Federal Trade Commission, however, was still in charge of managing the promotion of prescription drugs. This changed in 1962 with the Kefauver-Harris drug amendments. The amendments gave promotional authority of prescription drugs to the FDA. The amendments also required that all prescription drugs "must be proven both safe and effective" (p. 113). They must contain "a summary of contraindications, side effects, and effectiveness; and fair balance coverage of risks and benefits" (p. 113). In addition, the amendments required that the ads be readable and understandable (Wilkes et al., 2000).

For decades, these rules kept pharmaceutical companies from directly advertising prescription drugs to consumers in the United States (Gellad & Lyles, 2007). However, that all changed in 1981 when Boots Pharmaceutical launched a direct to consumer print

advertisement for its prescription drug, Rufen (Donohue, 2006). Merck followed with a campaign for its pneumonia vaccines. Eli Lilly then developed its own elaborate campaign for its anti-arthritis drug. The company created a public relations campaign and delivered press kits to all major radio and television stations. The stations aired information about the drug, focusing on its benefits and ignoring its risks. As a result, many people used the drug, and many suffered from its side effects. Eli Lilly reacted by voluntarily pulling the drug off the market (Donohue, 2006).

The ads caused internal debates within the FDA (Pines, 1999). To reach an internal consensus, in 1982 the FDA requested that the pharmaceutical companies voluntarily stop DTCA (Calfee, 2002). After conducting in-depth research about DTCA, in 1985, the FDA announced that the guidelines that applied to advertisements in physician journals now applied to DTCAs (Pines, 1999). The FDA required that the ads present a balanced overview of the benefits and risks and be true and not deceptive (General Accounting Office, 2002). In addition, the FDA also required DTCAs to include a brief summary about the risks associated with the drug (Calfee, 2002). For broadcast advertising, the FDA required pharmaceutical companies to include a “major statement” about the risks (p. 174). The major statement was long and detailed, which made it very expensive to air DTCA ads through television and radio media (Calfee, 2002).

History of DTCA Spending

The FDA’s ruling in 1985 discouraged television advertisements of prescription drugs but encouraged print advertisements (Calfee, 2002). Between 1989 and 1996, DTCA spending increased from \$12 million to \$579 million (Pines, 1999). In 1997, the FDA modified one of its DTCA rules and allowed pharmaceutical companies to not

include the major statement in television or radio advertisements (Calfee, 2002). The FDA, however, required pharmaceutical companies to direct consumers to a location where they could get detailed and balanced information about the advertised drug. The modified rule made it more feasible for pharmaceutical companies to air DTCA on television (Calfee, 2002).

In 1999, the FDA finalized its regulations concerning DTCA and made its expectations clearer to pharmaceutical companies (Calfee, 2002). That same year, DTCA spending in the United States experienced a sharp increase, reaching \$1.9 billion (Calfee, 2002). Five years later, spending reached \$4.4 billion (Choi & Lee, 2007). Some believe this continuous increase in DTCA spending influenced prescription drug sales (NIHCM, 2002). NIHCM reported that between 1999 and 2000, prescription drug sales increased from \$111.1 billion to \$131.9 billion, with the 50 most heavily advertised drugs accounting for 47.8% of the increase (NIHCM, 2002).

Types of DTCA

There are three types of DTCA: “product claim ads, help seeking ads, and reminder ads” (Vogt, 2005, Introduction section, para. 2). Product claim ads mention the drug’s name and the diseases it treats. Help seeking ads do not mention the drug’s name, but discuss the disease and its treatment and encourage patients to visit their doctors. Reminder ads only mention the drug’s name but do not include any information about the diseases the drugs treat (Vogt, 2005).

DTCA Around The World

These types of DTCA are only legal in the United States and New Zealand (Bradford & Kleit, 2006; Lakin, 2008). In Europe, there is the perception that all types of

DTCAAs are banned; however, that is not the case (Hone & Benson, 2004). Only product claim ads and reminder ads are illegal because they mention the brand names of the prescription drugs (Hone & Benson, 2004). Help seeking ads, however, are not banned, yet.

In 1996, Novartis experimented by airing the first help seeking ad in Europe. Novartis developed an ad campaign to educate the public about fungal infections (Hone & Benson, 2004). The ad campaign did not mention Novartis's new drug, Lamisil, instead it was an educational campaign that encouraged patients to talk to their doctor about fungus infection. The ad also encouraged patients to call for a free brochure. The goal of the ad was to create demand for Lamisil, without mentioning it. Some physicians' groups protested the ads by filing legal papers claiming that the ads were unethically influencing physicians' behaviors. The courts did not agree (Hone & Benson, 2004).

After Novartis' successful campaign, other pharmaceutical companies started airing help seeking ads (Hone & Benson, 2004). Research has shown these types of ads in Europe have been successful. A major reason for their success is pharmaceutical companies' approach to marketing their new drugs. They include all the essential parties (i.e., patients, health care associations, and physicians) in their marketing campaigns. They educate patients about a specific disease. Before they do that, however, they alert the physicians of the disease awareness campaign, and they also introduce the physicians to the new drug that treats the featured disease (Hone & Benson, 2004). By engaging physicians early in the process, a trustful relationship between the physicians and the pharmaceutical companies is most likely to emerge. This will ultimately lead to the physicians prescribing the newly promoted drugs.

Studies Evaluating DTCA

Ever since the FDA eased its regulations on DTCA and clearly outlined its guidelines, researchers have conducted many studies evaluating DTCA. Most of the studies, however, measured the attitudes of consumers and physicians toward DTCA. In general, the studies found that consumers saw benefits to DTCA (e.g., Choi & Lee, 2007; Gonul, Carter, & Wind, 2000; Henry J. Kaiser Family Foundation [HJKFF], 2008; Spiller & Wymer, 2001; U.S Food & Drug Administration [FDA], 2004). Physicians, on the other hand, had mixed feelings toward it (e.g., FDA, 2004; Friedman & Gould, 2007; HJKFF, 2002; Hollon, 1999; Lainer, 1982; Murray, Pollack, Donelan, & Lee, 2003; Weissman et al., 2004; Zachry, Dalen, & Jackson, 2008).

The studies specifically revealed that overall consumers viewed DTCA as an educational tool, as an early detection mechanism, and as an encouragement to get help (HJKFF, 2008). As for physicians, the studies found that the majority of them believed that DTCA did not provide a fair balance of information of the drugs' risks and benefits (e.g., FDA, 2004; Friedman & Gould, 2007; Robinson et al., 2004; Weissman et al., 2004). Some physicians also believed that DTCA created an unnecessary need (e.g., Hollon, 1999; Murray et al., 2003; Weissman et al., 2004), that it increased cost (Hollon, 1999), that it hindered physician-patient relationships (e.g., Robinson et al., 2004; Weissman et al., 2004), and that it influenced physicians' prescription writing behaviors (Venkataraman & Stremersch, 2007). Peyrot et al. (1998) found almost 99% of physicians in their study have prescribed or would prescribe a medication that their patients have suggested. *Prevention Magazine* also found that 32% of consumers have proactively discussed an advertised drug with their physicians (Choi & Lee, 2007).

Not all physicians believe DTCA is harmful. Several studies have found that some physicians saw benefits to it. Some noted that DTCA helped improve the patients' awareness of different and new treatments (Friedman & Gould, 2007; Weissman et al., 2004) and led to better physician-patient interactions (FDA, 2004).

DTCA and its Effect on Drug Sales

The effectiveness of DTCA on prescription drug sales is debatable. In 2002, the NIHCM reported that between 1999 and 2000, prescription drug sales increased from \$111.1 billion to \$131.9 billion, with the 50 most heavily advertised drugs accounting for 47.8% of the increase (NIHCM, 2002). Rosenthal, Berndt, Donohue, Frank, and Epstein (2002), also found that DTCA increased drug sales especially among highly priced prescription drugs. This was not the case with Berndt, Bui, Reiley, and Urban's (1995) findings. Even though their study showed that marketing improved drug sales, their findings revealed that DTCA was the least effective marketing tool when compared to directly marketing to physicians (e.g., journals, detailing).

Just recently, Law, Majumdar, and Soumerai's (2008) findings also questioned the effectiveness of DTCA on prescription drug sales. For the first time, researchers used a control group and a treatment group to evaluate if there was a difference in drug sales among those that were not exposed to DTCA (French speaking residents in Quebec) versus those that were exposed to DTCA (English speaking residents in Canada). They used three drugs (Law et al., 2008).

Their findings showed very poor support to the notion that DTCA increased drug sales (Law et al., 2008). For two of the drugs, there were no differences in drug sales between the control and treatment group. For one of the drugs, there were initial

differences in sales between the control and treatment groups. Sales initially increased among those that were exposed to DTCA (Law et al., 2008).

Use of Different Types of Endorsers in DTCA

Pharmaceutical companies have used different approaches to make DTCA effective. One of these approaches is the use of different types of endorsers (e.g., celebrities, experts, and typical consumers) in the ads; in fact, 7 of the 11 best selling and most heavily advertised prescription drugs in the Year 2000 either have used or are currently using endorsers in their DTCA (Arnold, 2005; Fillon, 2006; Johnsen, 2004; NIHCM, 2002; Peebles, 2003; Pepep, 2004). No studies have formally evaluated whether there was a difference in responses toward DTCA based on endorser types. This study attempted to do that. It used the theory of endorser effectiveness, which is part of a more well known theory called the match-up hypothesis. Before discussing these theories, however, the next sub-section identifies the different types of endorsers as they pertain to the study.

Different Types of Endorsers

There are three different types of endorsers: expert, celebrity, and typical consumers (Friedman, 1977). Expert endorsers are professionals who have superior knowledge of the products they are endorsing (Fireworker & Friedman, 1977). Celebrity endorsers are famous people who are endorsing products they are not normally identified with. Typical consumer endorsers are not famous; but, they use the products they are endorsing (Fireworker & Friedman, 1977).

There are strict guidelines to using these endorsers in any kind of advertisements, including DTCA of prescription drugs. The guidelines state that anything endorsers say

in the ad must be true and not deceptive (“FTC Guides Concerning Use of Endorsements,” 1980). Specifically, the guidelines assert that expert endorsers must have the qualifications that designate them as experts in the topic they are endorsing and that typical consumer endorsers must be real consumers that use the endorsed product. Their experiences with the product must be similar to other consumers (“FTC Guides Concerning Use of Endorsements,” 1980).

Using endorsers to promote different types of products is not something new. According to Kaikati (1987), this approach dates back to 1864, when a company used the testimonial of a celebrity to influence consumers. Since then, companies have spent a large amount of money to recruit such endorsers. For example, in 1999, athletic companies spent nearly \$500 million on expert and celebrity endorsers (Broughton, Lee, & Nethery, 1999). Researchers took notice of the popular use of endorsers. Many have conducted studies to understand their effectiveness. One popular theory that many of these researchers have used is the match-up hypothesis.

Match-Up Hypothesis

The match-up hypothesis states that endorsers are more effective when there is a fit between them and the product they are endorsing (Kahle & Homer, 1985; Kamins, 1990; Kamins & Gupta, 1994; Till & Busler, 2000). The match-up hypothesis can be explained using the schema congruity theory (Martin, 1996). The theory describes how consumers handle information. They categorize it and then evaluate it through associations and expectations (Ferris, 2004). For endorsements, the consumers compare

the products' schema and the endorsers' schema. If there is a match, consumers will have more favorable attitudes toward the product (Martin, 1996).

The earliest research about the match-up hypothesis dates back to 1973, where Kanungo and Pang (1973) found that the effectiveness of an endorser in an ad depended on the degree of fit between the endorser and the product. They came to that conclusion after conducting a 4 x 4 factorial research design. They used four treatment groups (male endorser, female endorser, pair of male and female endorsers, and no endorsers) and four products (car, sofa, stereo, and television).

They then randomly assigned 64 students to the four treatment groups (Kanungo & Pang, 1973). Upon calculating the means, Kanungo and Pang found a difference in responses based on a match between a specific product and the endorser's gender. For example, respondents who viewed the ad for the car with the male endorser rated the car more favorably than those who viewed the same ad with the female endorser. In addition, respondents who viewed the ad for the sofa with the female endorser rated the sofa more favorably than those who viewed the same ad with the male endorser. Further testing revealed that participants perceived the car to have masculine characteristics and the sofa to have feminine characteristics. Kanungo and Pang's findings opened the door for other researchers to evaluate the effectiveness of the fit between endorsers and the products they endorsed.

The attractiveness match-up hypothesis. Most of the studies on the match-up hypothesis have focused on one specific endorser, the celebrity and one specific factor, his or her attractiveness, in what is known as the attractiveness match-up hypothesis (Kahle & Homer, 1985; Kamins & Gupta, 1994; Lynch & Schuler, 1994; Till & Busler,

2000). This is because celebrity endorsers are widely used (Hsu & McDonald, 2002). For example, in 1979, 16% of commercials on television featured a celebrity (Erdogan, 1999). By 1997, that percentage jumped to 25% (Erdogan, 1999).

The attractiveness match-up hypothesis states that products that enhance customers' attractiveness should have an attractive celebrity endorser promoting them (Kamins & Gupta, 1994). Thus, there is a difference in responses toward a product that enhances attractiveness based on the celebrity type; attractive versus unattractive.

Baker and Churchill (1977) were the first researchers to study the attractiveness match-up hypothesis. They, however, did not use a celebrity endorser. Instead, they used generic attractive and unattractive models. Baker and Churchill developed a 2 x 2 factorial randomized research design. They used two independent variables: the type of models (attractive and unattractive) and the type of products (perfume and coffee). They described the perfume as a romantic product and the coffee as a not romantic product. They also used several dependent variables, including attitude toward the ad, attitude toward the product, and purchase intentions. The blocking variables were the participants' gender (Baker & Churchill, 1977).

Baker and Churchill (1977) recruited 96 students (48 males and 48 females) to take part in the study. Each of these students looked at two ads: one with the male model and one with the female model. Upon conducting one way analysis of variance (ANOVA), they found a difference in the male participants' responses toward the perfume ad based on the celebrity type (attractive versus not attractive). Male respondents expressed more interest in buying the perfume when the endorser was an attractive female model than when the endorser was an unattractive female model. This

finding supported the attractiveness match-up hypothesis because the perfume, a romantic product, enhances one's attractiveness, so the most effective endorser for that product is an attractive one (Baker & Churchill, 1977).

In 1980, McCollum/Spielman, a branding consulting company, conducted one of the earliest studies that evaluated the effectiveness of attractive celebrities in endorsing products that enhanced attractiveness (as cited in Forkan, 1980). The company looked at data between 1968 and 1980 on the industry's use of celebrity endorsers. The data included information about the consumers' attitudes toward the ads and their brand awareness (as cited in Forkan, 1980).

The study found that many advertisements that featured celebrities during that time were not effective because there were no matches between the celebrities' personalities and the products they endorsed (as cited in Forkan, 1980). For products that enhanced attractiveness, attractive celebrities like Cheryl Tiegs endorsing Cover Girl or Catherine Deneuve endorsing Chanel were effective (as cited in Forkan, 1980). This is because consumers identified with such celebrities and wanted to be like them (Kelman, 1961).

Kahle and Homer (1985) also tested the attractiveness match-up hypothesis by evaluating the fit between the celebrities' attractiveness and their endorsements to a specific brand of women's disposable razor. Kahle and Homer described the razor as a highly involved product. Using a sample of 200 students and randomly assigning them to different treatment groups, Kahle and Homer found that respondents who viewed the razor ad with the attractive celebrity were more likely to express interest in purchasing the razor than respondents who viewed the same razor ad with an unattractive celebrity.

The researchers also found that respondents who viewed the razor ad with the attractive celebrity had significantly more favorable attitudes toward the razor than respondents who viewed the same razor ad with an unattractive celebrity. Kahle and Homer explained their findings by noting that a razor helps improve a woman's attractiveness and femininity; which, according to the match-up hypothesis, makes the attractive celebrity the best fit for endorsing it.

Till and Busler (2000), however, criticized Kahle and Homer's (1985) findings. According to Till and Busler (2002), Kahle and Homer (1985) only used a product that enhanced attractiveness. Kahle and Homer did not evaluate what would happen if an attractive celebrity endorsed a product that did not improve attractiveness. In order to truly test the attractiveness match-up hypothesis, they needed to do that (Till & Busler, 2000). If they did, findings should have revealed no difference in responses toward the product that did not enhance attractiveness based on the celebrity type; attractive versus unattractive (Till & Busler, 2000).

Caballero, Lumpkin, and Madden (1989) did investigate the attractiveness and the not so attractiveness factors; however, they did not use a celebrity endorser. Instead, they used attractive and unattractive models to compare and contrast their effectiveness in persuading consumers to purchase a soft drink and cheese from a grocery store. Caballero et al. found no significant differences between the attractive and unattractive models. In fact, the attractive models were not at all effective in influencing consumers' purchasing behaviors. Caballero and her colleagues were surprised by the findings, citing many studies that supported the effectiveness of attractive people in influencing others. One, however, can explain such findings by using the attractiveness-match-up hypothesis.

Since cheese and soft drinks do not seem to enhance attractiveness, according to the match-up hypothesis, the attractiveness factor would not be an effective influential factor.

Kamins (1990) also compared and contrasted the effectiveness of the attractiveness versus unattractiveness factors. He used celebrities and completely tested the attractiveness match-up hypothesis. Kamins conducted a 2 x 2 factorial design and used two different products and two different endorsers. He selected Tom Selleck for the attractive celebrity and Telly Savalas for the unattractive celebrity. He used a Lexus car for the product that enhanced attractiveness and a home computer for the product that did not enhance attractiveness. As for the number of dependent variables, Kamins used seven, including advertiser's believability, source credibility, brand attitude, and attitude toward the ad. He recruited 89 graduate students and randomly assigned them to four different groups (Kamins, 1990).

Kamins (1990) found that Tom Selleck was significantly more credible to endorse a Lexus car than Telly Savalas. He also found that participants had significantly more favorable attitude toward the Lexus ad that Selleck appeared in than the same Lexus ad that Savalas appeared in. For the home computer, there was no significant difference between Selleck and Savalas on any of the seven dependent variables (Kamins, 1990). The findings completely supported the attractiveness match-up hypothesis because it showed that the attractiveness factor of an endorser is only effective when the attractive endorser promotes a product that enhances attractiveness (Kamins & Gupta, 1994).

Four years later, Kamins, along with his colleague Gupta, took their research a step further and specifically evaluated the effectiveness of product congruity on endorsers' credibility and attractiveness. Kamins and Gupta (1994) found that

respondents who were exposed to celebrities whose image fit with the products they endorsed rated the celebrities more believable and attractive than respondents who were exposed to the same celebrities that endorsed products that were not consistent with their images. The findings, however, were marginally significant and only applied to celebrity endorsers (Kamins & Gupta, 1994).

Not all studies supported the attractiveness match-up hypothesis. In 2000, Till and Busler conducted two studies. Their first study evaluated the attractiveness match-up hypothesis. They conducted a 2 x 2 factorial research design and used a fictitious endorser with a title of an Olympic athlete. To make him unattractive, a graphic designer altered his appearance. The endorsers promoted two products, a men's cologne, which enhanced attractiveness, and a pen, which did not enhance attractiveness (Till & Busler, 2000).

Participants were randomly assigned to one of four groups (Till & Busler, 2000). They were measured on attitude toward the brand, their intentions to purchase the product, and their opinion of the spokesperson. The results of the ANOVA testing did not support the attractiveness match-up hypothesis. The use of an attractive celebrity to endorse the men's cologne did not result in more favorable attitudes toward the cologne or in more intentions to purchase the cologne than the use of an unattractive celebrity (Till & Busler, 2000).

One explanation could be that the cologne is not a product that enhances attractiveness. Till and Busler (2000) concluded that the cologne used in the study enhanced attractiveness after only conducting one pretest. Unlike other researchers (e.g., Baker & Churchill, 1977), they did not provide any description in the study about the

participants in their pretest, including the number that participated. It is possible that the pretest participants were not representative of the population of interest that took part in the real study. It may be that the population of interest did not view the cologne as a product that enhanced attractiveness but as a necessary hygiene-enhancing product. If that was the case, then the findings did support the match-up hypothesis. Since both of the products, the cologne and pen, did not enhance attractiveness, there would be no significant differences in responses between the two products and the two types of endorsers.

Even though Till and Busler's (2000) study did not support the attractiveness match-up hypothesis, there is sufficient evidence of the theory's effectiveness. In addition to the studies conducted in the United States supporting it (e.g., Kahle & Homer, 1985; Kamins, 1990; Kamins & Gupta, 1994), other studies conducted outside the United States also support it (e.g., Alsmadi, 2006). This makes the theory's effectiveness universal.

Theory of Endorser Effectiveness

While more and more researchers were studying the effectiveness of the attractiveness factor in the match-up hypothesis, in 1977 Hershey Friedman, a Ph.D. student, took the concept of the match-up hypothesis to evaluate if there was a match between different types of endorsers and specific product types. Friedman studied the perceived risks associated with different types of products and the type of endorsers that reduced these risks (Friedman, 1977).

In his theory of endorser effectiveness, Friedman (1977) found differences in responses toward specific products based on endorser type. He specifically found that the

most effective endorser to use for products that carry a high physical, performance, and/or financial risks is an expert endorser. The most effective endorser to use for products that carry high social, psychological, or both risks is a celebrity endorser, and the best endorser to use for products that are low in all risks is a typical consumer (Friedman, 1977). This dissertation used the theory of endorser effectiveness to evaluate whether there was a difference in responses toward a prescription drug ad based on endorser type. The next sub-section discusses the origins of the theory. After that, several studies are analyzed using the theory.

Origins of the Theory

Friedman derived the theory of endorser effectiveness by studying and merging different literature topics. The three important topics that helped form the theory of endorser effectiveness were consumers' perceived risks when purchasing a product (Bauer, 1960), the use of endorsers to reduce those risks (Roselius, 1971), and social influence theory as it relates to the different types of endorsers (Kelman, 1961). The following pages demonstrate how these different topics merged to form the theory of endorser effectiveness.

Perceived risks. Bauer popularized the term perceived risk in 1960 after writing about the topic and presenting it at a national conference (Dowling, 1986). Bauer noted that there are always uncertainties and possibilities for negative consequences when buying a product (Bauer, 1960). He explained that anytime consumers are contemplating purchasing a product, they are not 100% sure if the product will actually meet their expectations. Thus, they are taking risks. Sometimes these risks lead to negative outcomes because the product does not perform as expected (Bauer, 1960).

Jacoby and Kaplan (1972) identified five types of perceived risks associated with buying a product: “financial, performance, physical, psychological, and social” (p. 382). Financial risk is the probability of losing money because the purchased product or service either did not work or cost more than it should (Friedman, 1977). Performance risk is the probability of buying a product that does not meet the buyers’ expectations. Agarwal and Teas (2001) found that performance risks increase financial risks because if the product does not work as expected, it will end up costing the buyer more to either fix or replace. Physical risk is the probability that the product will cause possible harm (i.e., side effects). Psychological risk is the probability that the product will not fit the buyer’s self image. Finally, social risk is the probability that the product will make others think less of the buyer (Friedman, 1977).

Jacoby and Kaplan (1972) and Kaplan, Szybillo, and Jacoby (1974) found that depending on the product, some risks are more important than others. Some products are high in financial, performance, and/or physical risks while others are high in social, psychological risks or both. The researchers came to this conclusion after asking 104 students to evaluate 12 different products on each of the five types of risks. The products were sports car, life insurance, color TV, suites, winter coats, dress shoes, deodorants, toothpaste, razor blades, vitamins, aspirin, and a deck of cards.

Jacoby and Kaplan (1972) and Kaplan et al. (1974) found that for each of the fashion related products (i.e. suits, dress shoes, winter coats), respondents ranked social and psychological risks as the top two risks followed by financial risk. Performance and physical risk ranked least. The results, however, were different when respondents ranked the risks associated with health related products (i.e. vitamins, aspirin). Respondents

ranked physical and performance risks as the top two risks, followed by financial risk. Social and psychological risks ranked least. In both studies, the researchers concluded that in general, products that belong to the same classes carry the same types of risks.

Jacoby and Kaplan's (1972) and Kaplan's et al. (1974) findings appear logical. For products that are health related, such as medications, consumers are concerned with their side effects and their performance. In general, consumers are not concerned with the social risks because medications are not visible to other people (Jacoby & Kaplan, 1974). Shoes and dresses, however, are visible. The brand name of clothes and shoes can influence how people think of themselves and how others perceive them.

In order to convince consumers to purchase a product, marketers must find ways to reduce the risks that are associated with each product (Agarwal & Teas, 2001; Bearden & Shimp, 1982; Jacoby & Kaplan, 1972). Roselius (1971) identified several factors that reduce consumers' perception of risks: "endorsements, brand loyalty, major brand image, private testing, store image, free sample, money back, government testing, shopping, expensive model, and word of mouth" (pp. 57-58).

To identify which of these factors were the most effective in reducing the perceived risks (i.e. physical, performance, social, psychological, financial, and/or time risks), Roselius (1971) administered a survey to 472 housewives. The respondents were presented with different buying situations and had to rate how likely each of the 10 variables reduced each of the risks. Roselius found that brand image and brand loyalty were the greatest risk reducers while buying the most expensive product was the least risk reducer. Roselius also found that using an endorser ranked as a neutral risk reducer for

time, performance, social, and psychological risks and as an unfavorable risk reducer for physical risk (Roselius, 1971).

Friedman (1977) focused his study on one type of risk reducer, the endorser. After reading Jacoby and Kaplan's (1972) findings, he hypothesized that just as certain products are perceived to have more risks than others, certain endorsers reduce certain risks. Friedman, then, turned to Kelman's (1961) work to identify which endorser type was most effective in decreasing specific risks.

Social influence. Kelman (1961) evaluated the importance of social influence in changing one's opinion. He identified three types of social influence: "compliance, identification, and internalization" (p. 62). According to Fraser and Brown (2002), individuals are influenced by the influencing agent because they believe that they have some kind of relationship with that agent.

In compliance, individuals comply with the influencing agents because the individuals want positive reactions from them (Kelman, 1961). For example, employees comply with the company's rules and policies in order to keep their jobs and receive the associated positive benefits.

In identification, the individuals are influenced by the influencing agents because that relationship helps the individuals identify who they are (Kelman, 1961). There are two types of identification: "reciprocal relationship" and "classical identification" (p. 63). In reciprocal relationships, both individuals involved know what to expect from each other in the relationship (Kelman, 1961). A doctor-patient relationship is a reciprocal relationship. Patients visit their doctors when they are sick, and they expect their doctors to help them get better. The doctors, in return, expect their patients to follow

recommended treatments. In classical identification, the individual basically wants to “be the other person” (Kelman, 1961, p. 63). In other words, the individual talks, acts, and behaves like the influencing agent. In this relationship, individuals use the influencing agent to form their self image and to be accepted to a specific social circle (Kelman, 1961). The late Elvis Presley is one of the most famous celebrities in the nation. He influenced his impersonators through the classical identification process (Fraser & Brown, 2002). Presley’s impersonators are die hard fans who idolize him and want to be like him, so they end up talking, acting, and behaving like the king (Fraser & Brown, 2002).

In internalization, individuals are influenced by others who have similar values and could help them solve specific problems (Kelman, 1961). Coleman, Katz, and Menzel (1957) found that physicians who do not have enough information about a new drug turn to physician leaders and emulate their behaviors (Coleman et al., 1957). The physicians have a specific problem to solve and through the internalization process, they turn to someone who has similar values and who could help them solve a problem.

Matching endorser types to social influence types. Kelman (1961) did not specifically identify who is the most effective endorser in influencing others in the classical identification and internalization relationship. For the classical identification process, he emphasized the importance of the influencing agent’s attractiveness. Friedman (1977) took Kelman’s findings to hypothesize that in classical identification, the most influential agent is a celebrity endorser. Since the identification process is about self image, likableness, attractiveness, and good taste, Friedman concluded that celebrity

endorsers in the identification process should endorse products that are high in social, psychological, or both risks.

Friedman (1977) was not the first researcher to recognize that the celebrity is the most influential endorser in the identification process; in fact, there is research as early as the 1950s that connected celebrities and the identification process. In 1950, Kenneth Burke developed the dramatism theory (Basil, 1996). According to the theory, in order for a play to be effective, the audience member must identify with the celebrity (Kahle & Riley, 2004). The audience member must connect with the performer and form a bond (Basil, 1996). The bond persuades the audience member that the performance was great (Basil, 1996).

Horton and Wohl (1956) also found celebrity influence in the identification process. In their study, they found that television viewers developed a fictional relationship with actors that they repeatedly saw on television. These viewers identified with the celebrity and were influenced by them (Horton & Wohl, 1956).

Albert Bandura, a known psychologist, also found that children imitated television characters because they identified with them (as cited in Kahle & Riley, 2004). Bandura later developed the social learning theory, which also addressed the importance of identification in behavior emulation. According to Bandura, people imitate the behaviors of others who are similar to them or who they desire to be like (as cited in Basil, 1996). Basil added that many times people identify with celebrities because they want to have their characteristics (i.e., attractiveness, fame, and money).

As for the type of endorser that is most effective in the internalization process, Kelman (1961) also did not specify the endorser type. He, however, emphasized the

importance of credibility in the internalization relationship. Kelman said, “A person may adopt the recommendations of an expert, for example, because he finds them relevant to his own problems and congruent” (p. 65). Based on Kelman’s work, Friedman (1977) then concluded that expert endorsers should be used when evaluating products that are high in physical, performance, and/or financial risks.

For products that are low in risks, Friedman (1977) hypothesized that the most effective endorser is a typical consumer. Friedman explained his rationale by pointing out that it does not make sense to use celebrity or experts to endorse products that do not carry risks, such as toilet paper. The best endorser to do that is a typical consumer.

Testing the Theory of Endorser Effectiveness

To test his theory, Friedman (1977) conducted a pretest and identified three products for use in the study: vacuum cleaner, costume jewelry, and bag of cookies. After conducting a pretest, Friedman found that consumers perceived the vacuum cleaner to be high in financial, physical, and performance risks and low in social and psychological risks; costume jewelry to be high in psychological and social risks and low in physical and financial and performance risks; while the bag of cookies was low in all risks.

Based on his research, Friedman (1977) hypothesized a product endorser type interaction between the vacuum cleaner and the expert endorser, between the costume jewelry and the celebrity endorser, and between the bag of cookies and the typical consumer. To test his hypotheses, Friedman conducted a 4 x 3 factorial design. He developed 12 fictitious ads, which included the different types of endorsers promoting each of the products. Some of the ads did not include any endorsers. These ads acted as the control group. For example, for the vacuum cleaner product, Friedman developed

four fictitious ads; one with the expert endorser, one with the celebrity endorser, one with the typical consumer, and one with no endorser. Friedman did the same for the other two products.

To control any extraneous variables, all of the ads were somewhat similar. Friedman (1977) used the same content in all of the ads. The picture and name of the expert and typical consumer were the same. For the celebrity endorser, Friedman used Mary Tyler Moore.

Friedman (1977) recruited 360 housewives in a White middle-class neighborhood in Brooklyn to take part in the survey study. He randomly assigned each of the participants into one of the groups. Each group had 30 subjects. Each of the participants in the group took a three-page survey that evaluated their attitudes toward the ad, their attitudes toward the product, their attitudes toward the endorser; their intended behavior after they viewed the ad; their estimate of the products' price, and their recall level.

After conducting statistical analysis, which included multiple analyses of variance (MANOVA), ANOVA, and simple descriptive statistics, Friedman (1977) found significant differences in responses toward the vacuum cleaner, the costume jewelry, and the bag of cookies ad based on the endorser type. Friedman found that respondents' attitude toward the ad significantly depended on the combination of the particular product-endorser type. Specifically, he found that the ad with the expert endorser was rated more favorably than the other ads when the product advertised was high in physical, financial, and performance risks (i.e., vacuum cleaner). He also found that the ad with the celebrity endorser was rated more favorably than other ads when the product advertised was high in social and psychological risks (i.e., costume jewelry). Finally, he found that

the ad with the typical consumer endorser was rated more favorably than other ads when the product advertised was low in all risks (i.e., bag of cookies).

In measuring the respondents' attitudes toward the product and their purchase intentions, Friedman (1977) also found a significant product-endorser type interaction. Respondents rated the product (i.e., vacuum cleaner) that was high in physical appearance, performance, and financial risks significantly more favorable when the endorser was an expert than when the endorser was a celebrity or a typical consumer. He also found that the intent to purchase a product that was high in physical, performance, and financial risk was significantly greater when the endorser was an expert rather than a celebrity or a typical consumer. Friedman also found that respondents rated the product (i.e., costume jewelry) that was high in social and psychological risks significantly more favorable when the endorser was a celebrity than when the endorser was an expert or a typical consumer. The intent to purchase the costume jewelry was also significantly greater when the endorser was a celebrity than when the endorser was an expert or a typical consumer. Finally, respondents rated the product (i.e. bag of cookies) that was low in all risks significantly more favorable when the endorser was a typical consumer than when the endorser was a celebrity or an expert endorser. The intent to purchase the bag of cookies was also significantly greater when the endorser was a typical consumer than when the endorser was a celebrity or an expert endorser (Friedman, 1977).

In evaluating the product's expected selling price, Friedman (1977) did not find a significant product-endorser type interaction. However, the results seemed to be in agreement with one of Friedman's hypothesis, where respondents rated all the products

that featured the celebrity more expensive than the products that featured the other types of endorsers.

Friedman (1977) also evaluated the ad's believability factor and found a significant product-endorser type interaction. Respondents cited the expert endorser significantly more believable when she endorsed the vacuum cleaner than when she endorsed the costume jewelry or the bag of cookies. Respondents found the celebrity endorser significantly more believable when she endorsed the costume jewelry than when she endorsed the vacuum cleaner or the bag of cookies. Respondents also found the typical consumer significantly more believable when she endorsed the bag of cookies than when she endorsed the vacuum cleaner and the costume jewelry. Finally, Friedman found that the ads with the celebrity endorser were remembered most as compared to the ads with other type of endorsers (or no endorsers).

How Theory Applies to This Study

The purpose of this study was to identify whether there were differences in responses toward a prescription drug ad based on endorser type. Since a prescription allergy medication is high in physical, performance, and financial risks, one could use the theory to predict that respondents who view the ad with the expert endorser will have a different attitude and behavioral intentions toward the ad and the advertised drug than those who view the ad with the typical consumer endorser, celebrity endorser, or no endorser. Most likely, respondents will also rate the ad and the advertised drug with the expert endorser more favorably than the ad with the other endorsers.

Friedman developed the theory of endorser effectiveness more than 31 years ago; however, evidence of such an idea existed long before Friedman's findings. The next

sub-section discusses some of these studies and how they are related to the theory of endorser effectiveness.

Before Theory: Evidence of Product-Endorser Type Interaction

Even though Friedman (1977) was the first researcher to specifically study interaction between products and endorser types, researchers before him have stumbled across surprising finds that supported the theory of endorser effectiveness. For example, in 1965, Brock conducted a field experiment and surprisingly found that a typical consumer was more effective than an expert endorser in persuading the customer to buy more or less paint (Brock, 1965).

Brock (1965) conducted his study in the paint department of a large retail store. Two part-time salesmen took part in the study. One of the salesmen played the role of an experienced salesman that shared dissimilarities with the consumers' paint consumption, while the other played the role of an inexperienced salesman that shared similarities with the consumers' paint consumption. The goal was to try to convince the customers to spend more or less money on the paint. The independent variables were the salesmen's level of similarities to the customers as it related to the customers' paint consumption, the salesmen level of expertise, and the salesmen's advice on price levels. The dependent variable was whether the customer was influenced by the salesmen's suggested price level (Brock, 1965).

The salesmen approached 88 customers (Brock, 1965). As they were ready to check out, one of the salesmen tried to convince them to switch to a different paint at a different price level. Findings revealed that the salesman who shared similarities with the customers and who was portrayed as less experienced in the paint department was more

effective in inducing purchasers to change their behavior than the salesman that had more knowledge and shared no similarities with the customers (Brock, 1965). Based on Friedman's theory, one explanation for Brock's findings could be that paint is a product that is low in physical, performance, financial, social, and psychological risks. If that is the case, then according to the theory of endorser effectiveness, the most effective endorser is the typical endorser who shares similarities with the customers.

Settle's (1972) findings also supported Friedman's (1977) theory of endorser effectiveness. Settle found a relationship between endorser type and product type on consumers' confidence in the product. Confidence in the complex products was highest when the endorser was an expert. Just like Friedman, Settle saw a connection between expert endorsers, complex products, and Kelman's (1961) internalization process. Settle also found that confidence in the visible products was highest when the source was a typical consumer. Settle noted that the typical consumer is the most effective endorser in Kelman's identification process. This was different from Friedman's (1977) findings. As discussed earlier, Friedman found that for highly visible products, a celebrity is the most effective endorser to use.

Initially it seemed that part of Settle's (1972) findings contradicted Friedman's (1977) theory of endorser effectiveness, but this is not the case. In Friedman's study, a celebrity was the most effective in endorsing products that were highly visible. The typical consumer came in second while the expert endorser ranked at the bottom. Since Settle (1972) did not use a celebrity as one of the endorsers in his study, the typical consumer would be the most effective in endorsing products that were highly visible.

A year after Settle's (1972) study, Crisci and Kassino's (1973) findings also supported the future theory of endorser effectiveness. The findings showed a difference in responses toward picking up a book order form based on endorser type. Crisci and Kassino specifically found that a child psychologist with the "Dr." designation significantly influenced the parents' behaviors more than the same psychologist with the "Mr." designation. The sample was made up of 96 pairs of parents and their children. They were invited to meet individually with a person concerning their child's educational development. Some of the parents were introduced to the person as a Dr., and others were introduced to the person as Mr. The person administered an intellectual test to each of the kindergartners in different settings. The person also gave a positive, negative, or neutral advice to the parents about their children's development. As the meeting wrapped up, the person recommended that the parents order a book about child development. The parents were then required to pick up an order form from a receptionist (Crisci & Kassino, 1973).

After conducting Chi-Square Test of Independence, Crisci and Kassino (1973) found that participants were more likely to pick up the ordering form and mail it when the person they met with was designated as a Dr. rather than a Mr. In addition, positive advice yielded more parent compliance than neutral advice. One can use Friedman's theory of endorser effectiveness to explain Crisci and Kassino's findings. As Friedman (1977) noted, an expert's advice is most effective when the products are high in performance, physical, and/or financial risks. There are many books about child development. The risk of choosing the wrong book is high. The book might not perform as promised or it could provide advice that is harmful to one's children. Some questions

that parents might have include, “How do I know that this is the best book about child development, and what if the book contains advice that is not effective or harmful to my child?” To reduce these perceived risks, parents are more likely to listen to the expert (Dr.) rather than to the typical consumer (Mr.).

Woodside and Davenport (1974) also found evidence supporting Friedman’s future theory of endorser effectiveness. They tested whether there is a difference in consumers’ purchasing behaviors of a tape cleaning kit based on endorser type. The results revealed that more than 80% of the randomly assigned customers who received the expert/similar treatment bought the tape cleaning kit, compared to the only 13% of the customers who received the non-expert/dissimilar treatment. In addition, more than 66% of the randomly assigned customers who listened to the expert saleswoman bought the cleaning kit, compared to only 21.6% of the randomly assigned customers who listened to the non-expert saleswoman. In addition, the expert saleswoman sold more of the new product than the saleswoman who shared similarities with the customers (Woodside & Davenport, 1974).

Woodside and Davenport’s (1974) findings were in line with Friedman’s theory of endorser effectiveness. The researchers described the tape cleaning kit as complex and new. They also mentioned the importance of knowing how to use the tape cleaning kit because it could cause physical harm. In addition, because the kit was new, it was also expensive. Based on their description of the tape cleaning kit, one can deduce that it carried high physical, performance, and financial risks. According to Friedman (1977), the best endorser to reduce these types of risks and ultimately influence the customers’ purchasing behavior is the expert endorser, not the celebrity or the typical consumer.

After: Studies Supporting the Theory of Endorser Effectiveness

After Friedman (1977) published his dissertation about the theory of endorser effectiveness, he and other researchers started formally testing it on various products, such as wine, bank products, calculators, OTC medications, etc. Most of the findings supported the theory. For example, Fireworker and Friedman (1977) tested the theory in shopping centers in New York City. The researchers asked 200 respondents to taste a new brand of wine and take a quick survey. Respondents were randomly assigned to different groups, with each group receiving a quote from a different type of endorser (celebrity, expert, typical consumer, company endorsement, and no endorser).

Fireworker and Friedman (1977) found a significant difference in the consumers' attitudes toward the advertised wine based on the endorser type. The difference existed between the celebrity endorser and the no endorser and between the wine critic endorser and the no endorser. They also found that consumers were more likely to purchase the wine when the endorsers were celebrities and wine critics than when the endorsers were typical consumers or organizations, or when no endorsers were used. These findings, however, were not significant. One explanation for this was the wine tasting itself (Fireworker & Friedman, 1977). According to Fireworker and Friedman, after tasting the wine, the participants might have not liked it and decided not to buy it. In this case, tasting the wine acted as an extraneous variable and may have possibly skewed the results.

Two years after publishing the study with Fireworker, Friedman worked with Termini and Washington to verify the theory of endorser effectiveness. Just like the previous study, Friedman et al. (1979) used a fictitious wine and evaluated whether there

was a difference in college students' responses toward a wine advertisement based on endorser type. Unlike participants in his previous study, in this study participants did not taste the wine (Friedman et al., 1979).

The researchers used a convenience sample of 150 undergraduate students and randomly assigned them to different groups (Friedman et al., 1979). Each group received one of the ads with the different type of endorser. A simple survey was administered and one way ANOVA was used to test the theory of endorser effectiveness. Findings showed that there was a significant difference in the respondents' taste expectations as a function of the endorser type. The significant difference existed between the celebrity endorser and the no-endorser group. The celebrity endorser elicited significantly better taste expectations than the no endorser group. In addition, compared to the other groups, the celebrity endorser scored highest on the believability factor and taste expectations and second highest on the purchase intention factor.

Some of these findings supported Friedman's theory of endorser effectiveness. Friedman (1977) noted that the most effective endorser to use for products related to good taste and image are celebrity endorsers. The students in Friedman's et al. (1979) study identified with the celebrity's image and that influenced their perception of the ad's believability and their taste expectations.

Kerin and Barry's (1981) study also supported Friedman's theory. Part of the study evaluated the influence of the expert endorser on consumers' attitudes and behaviors toward a new bank's services. Kerin and Barry administered a field experiment on 50 males and 50 females that live within two miles of the new bank. The participants were randomly assigned to different groups that received different ad treatments. One of

the groups received the ad about the bank's services with the picture of the model identified as the CEO, another group received the same ad with the same model but no identification, and another group received the same ad without a model.

Kerin and Barry (1981) found that consumers who viewed the ad with the bank CEO rated the bank significantly more favorable and more reliable as compared to those who viewed the ad with the generic model and those who viewed the ad without the model (Kerin & Barry, 1981). In addition, consumers who viewed the ad with the bank CEO were more likely to ask about the advertised products than those who viewed the ad with the generic model and those who viewed the ad without the model. These findings supported Friedman's theory of endorser effectiveness. A bank is a place where people deposit their earnings, apply for loans, and save and invest money. Therefore, it could be argued that there are high financial and performance risks when choosing the right bank. If that is the case, then by following Friedman's theory, the best type of endorser is the bank's CEO.

It is important to note that one of the major weaknesses of Kerin and Barry's (1981) study was its lack of completely evaluating the theory of endorser effectiveness. The theory includes three different types of endorsers. Kerin and Barry's study only included one endorser, the expert. It did not include a celebrity endorser or a typical consumer. In addition to the expert endorser, Kerin and Barry used a model without any identification and compared it to the expert endorser and to the no endorser. To truly test the theory, Kerin and Barry needed to include the different types of endorsers and compare and contrast their influence on the consumers.

Rubin, Mager, and Friedman (1982) also evaluated the effective use of a CEO endorser promoting his furniture store. Just like Kerin and Barry (1981), Rubin et al. found that the ad with the CEO was viewed more favorably than the ad with the model spokesperson. Also, just like Kerin and Barry's (1981) study, Rubin et al. did not evaluate the effectiveness of the three different types of endorsers on promoting the furniture store. They only used the expert endorser.

Freiden (1982), on the other hand, used the three different types of endorsers (expert, celebrity, and typical consumer) to test the theory of endorser effectiveness. Freiden evaluated whether there was a difference in respondents' attitudes toward a handheld calculator based on endorser type. Freiden described the calculator as a "complex electronic product" (p. 77). Following Friedman's theory, Freiden predicted a significant product-endorser type interaction, with the expert endorser being the most effective and influential endorser as compared to the other types of endorsers (Freiden, 1982).

To test his hypothesis, Freiden (1982) used a sample of 135 college students. Just like previous studies that tested the theory of endorser effectiveness, the participants were randomly assigned to different treatment groups and measured on variables, such as, overall opinion on ad, perceived price, purchase intent, and calculator usage. After running MANOVA and ANOVA statistics, Freiden found a significant product-endorser type interaction. The expert endorser elicited the most favorable attitude toward the hand held calculator than any other endorsers no matter which type of magazine the ads appeared in. Freiden's findings were similar to Woodside and Davenport's (1974). As noted earlier, Woodside and Davenport also found that the expert saleswoman attained

more favorable attitudes toward the new complex technology product and sold more of it than the typical consumer saleswoman.

Harmon and Coney (1982) also used technology to evaluate whether there were differences in responses toward buying or leasing a computer based on endorser type (one that is highly credible versus one that is less credible). They found that the expert endorser was more effective than the less credible endorser in eliciting favorable attitudes toward the purchased computer and in increasing the consumers' likelihood of purchasing the computer. Harmon and Coney also found that the less credible endorser was more effective than the highly credible source in eliciting favorable attitudes toward the leased computer and in increasing the consumers' likelihood of getting a leased computer.

Harmon and Coney (1982) did not mention Friedman's theory of endorser effectiveness in their study, but their findings supported the theory. According to Harmon and Coney, buying a computer had greater financial and performance risks than leasing a computer. The customers could not return or trade the purchased computer, and the warranty ran out after 90 days. The customers, however, could return the leased computer, could trade it in for a better model, and did not have to pay for any maintenance fees (Harmon & Coney, 1982). To reduce the perceived risks associated with buying the computer, the endorser effectiveness theory recommended using the expert endorser, who in this study was a highly credible source (Friedman, 1977). Harmon and Coney's findings were also similar to Freiden's (1982) and Woodside and Davenport's (1974) findings.

Atkin and Block (1983) did not use a technology product to identify the most effective type of endorser in their study. Instead, they used advertisements that featured alcoholic beverages (beer and whiskey). The purpose of their study was to evaluate the effectiveness of celebrity endorsers versus no celebrity endorsers on consumers' attitudes toward the ad, consumers' attitude toward the featured alcohol, consumers' purchase intentions, and consumers' perception of the endorsers' credibility. They recruited 196 participants ranging in ages from 13 to 77 years old and randomly assigned them to different treatment groups (Atkin & Block, 1983).

Since it is perceived that alcohol is a product that is high in social and psychological risks, Atkin and Block (1983) predicted that the celebrity endorsers would be more effective than the non-celebrity endorsers. Their findings supported that, with the celebrity endorsers being rated significantly more trustworthy and competent than the non-celebrity endorsers. In addition, the alcohol was rated more favorably when the endorsers were celebrities than non-celebrities. The ads with the celebrity endorsers also elicited greater purchase intentions than the ads with no celebrity endorsers. The difference, however, was not significant (Atkin & Block, 1983).

Up until 1983, all of the studies that evaluated the influence of different types of endorsers on consumers' behaviors and attitudes somewhat supported Friedman's theory of endorser effectiveness. In 1984, Freiden's study did not. Freiden evaluated the endorser's effectiveness on consumers' attitudes and purchase intentions of a colored television. Just like researchers before him, Freiden randomly assigned younger and older individuals to different treatment groups. Each individual viewed a similar television ad

that contained either an expert, a typical consumer, a company CEO, or a celebrity endorser. The participants were measured on 16 variables (Freiden, 1984).

Based on findings from previous similar studies that evaluated endorser effectiveness of technology products (e.g, Freiden, 1982; Woodside & Davenport, 1974), it was expected that the expert endorser in Freiden's (1984) study would be more effective than the other types of endorsers in the study. That was because it is assumed that technology products are high in physical, financial, and/or performance risks; and, according to Friedman (1977), an expert endorser is most effective in reducing those types of risks.

Freiden's (1984) study, however, did not find that to be true. In fact, Freiden did not find a particular type of endorser to be the most effective. Freiden then concluded that choosing the right endorser really depended on the ad's objective. For example, if the objective of the ad was to raise awareness, then according to Freiden, the best endorser type to use was the celebrity. If the objective of the ad was to help the consumer understand the product, then the best endorser to use was the expert. Freiden noted that his findings still revealed a product-endorser type interaction. However, unlike Friedman (1977), the interaction was not related to matching the consumers' perceived risks to the type of endorser that reduced those risks (Freiden, 1984).

Freiden's (1984) findings did not stop other researchers from exploring Friedman's theory of endorser effectiveness. In 1985, Lipscomb evaluated the effectiveness of different types of endorsers in ads that featured OTC medications. Using Friedman's theory, Lipscomb predicted that since OTC medications carried physical

risks, the most effective endorsers to influence consumers' purchase intentions were the expert endorsers (Lipscomb, 1985).

Lipscomb (1985) used a 5 x 4 factorial design. She used five different types of endorser categories (physician, pharmacist, physician and pharmacist, celebrity, typical consumer) and four different types of OTC medications (headache medicine, cough and cold medicine, anti-diarrhea medicine, and itch and rash medicine). The different endorser categories and the different medication types made up the independent variables, while the consumer's purchase intention made up the dependent variable.

Using these variables, Lipscomb (1985) developed several hypotheses. One of them predicted a significant difference in responses toward the OTC medication based on endorser type. Specifically, Lipscomb predicted that the expert endorser (physician then pharmacist) would significantly be more influential than other types of endorsers (celebrity and typical consumer). Lipscomb also predicted that the two experts (physician and pharmacy) appearing in one ad would significantly be more influential than any other types of endorsers. In evaluating the different medications, Lipscomb predicted a significant difference between the different medicines and their most influential endorser. Finally, Lipscomb predicted that there would be a significant difference in findings among those that watched a movie before looking at the ads and those that did not. The movie positioned the pharmacist as knowledgeable.

Each student received five ads for one OTC medication. Each one of the ads contained one of the endorser category types. The ads included one survey question that evaluated the students' likelihood of purchasing the OTC medication. Some students

watched a movie before getting exposed to the ads and the survey (Lipscomb, 1985).

After the data was collected, Lipscomb (1985) ran ANOVA statistics and found strong evidence to support Friedman's theory. She found significant differences between the different endorser categories for all four OTC medications. Upon conducting post hoc analysis, she found that in all four OTC medications, the difference existed between the expert endorsers and the typical consumer endorsers and between the expert endorsers and the celebrity endorsers. She specifically found that the physician and pharmacist endorsers appearing in the ad together were significantly the most effective in influencing the consumers' purchase intentions. The physician appearing in the ad alone followed in second, and the pharmacist followed in third (Lipscomb, 1985).

It makes sense that Lipscomb's (1985) findings would apply to all four OTC medications. Jacoby and Kaplan's (1972) study found that products of the same class carried the same risks. Since all of the medications in Lipscomb's study were classified as OTC, they would carry physical and performance risks. According to Friedman (1977), the most effective endorser to reduce these risks and influence consumers is the expert endorser.

Other results in Lipscomb's (1985) study revealed that the group that received the pretreatment of the video rated the expert endorser more influential than the group that did not receive the pre-treatment. The video, which positioned the pharmacist as an expert, did not, however, lead to consumers perceiving the pharmacist as more of an expert than the physician. However, it did lead to a more favorable attitude toward the pharmacist (Lipscomb, 1985)

Elaboration Likelihood Model

Between 1985 and 1995, no literature surfaced about Friedman's theory of endorser effectiveness. One reason could be that researchers were busy evaluating a popular new persuasion theory called the elaboration likelihood model (ELM) (e.g., Bitner & Obermiller, 1985; Cacioppo & Petty, 1984; Chaiken & Maheswaran, 1994; Cole, Ettenson, Reinke, & Schrader, 1990; Miniard, Dickson, & Lord, 1988; Petty & Cacioppo, 1983; Petty, Cacioppo, & Goldman, 1981).

ELM states that there are two routes of persuasion; the central route and the peripheral route (Cacioppo & Petty, 1984; Kaufman, Stasson, & Hart, 1999; Petty & Cacioppo, 1983; Rucker & Petty, 2006). Consumers use the central route by evaluating the intrinsic cues, such as the merit of the message. Based on their in-depth evaluations of the message, consumers either accept or reject the message. Consumers use the central route of persuasion when the topic is important to them, when they are not distracted while being exposed to the topic, when they understand the message, and/or when they are knowledgeable about the topic (Petty & Cacioppo, 1983). Otherwise, consumers use the peripheral route of persuasion. For the peripheral route of persuasion, consumers do not evaluate the merit of the message instead they are influenced by such extrinsic cues as color, physical attractiveness, and endorsers (Petty & Cacioppo, 1983).

It is important to note that recent research about ELM found that some variables, such as endorsers, could act as both extrinsic and intrinsic cues (Rucker & Petty, 2006). Some researchers have noted that there is an interaction between the level of involvement and the endorser type. For example, Cole et al. (1990) found that consumers were more influenced by an expert endorser than other endorsers when the consumers were highly

involved in the product or service. The expert influenced consumers' attitudes toward the ad, consumers' attitudes toward the product, and consumers' behavioral intentions.

In applying Cole et al.'s (1990) findings to this study, the same conclusion could be reached as the one reached when using the theory of endorser effectiveness. There would be a difference in responses toward a prescription drug ad based on endorser type. Since the study was being conducted in an allergy clinic, all of the patients were highly involved in the topic and found it important. Therefore, respondents would most likely rate the ad and the allergy medication with the expert endorser more favorably than they would rate the other ads with the different endorsers.

Recent Studies and Theory of Endorser Effectiveness

In recent years, several researchers have conducted studies to investigate the difference in responses toward different products based on endorser type (e.g., Martin, 1996; Mehta, Lawlani, & Ping, 2001; Till & Busler, 2000). While these researchers have focused on theories other than the theory of endorser effectiveness, all of their research could be linked to the theory of endorser effectiveness.

In 1996, Martin conducted a study to evaluate the effectiveness of an athlete endorser on different products, such as bath oil cologne, power saw, exercise machine, and gym shorts. The athletic endorsements of the bath oil and power saw ads were not evaluated favorably while the athletic endorsements for the gym shorts and the exercise machine were evaluated favorably (Martin, 1996). These findings could be explained using Friedman's theory of endorser effectiveness. Other research has shown that bath oil was high in social and psychological risks (e.g., Baker & Churchill, 1977; Till & Busler,

2000); therefore, according to the theory, the attractive celebrity would be more influential than the expert athlete (Friedman, 1977). As for the power saw, it is logical to assume that it carries financial, performance, and possibly physical risks; therefore, according to Friedman's theory, an expert in that field (i.e., welder) would be more influential than the expert athlete. It also seems logical to assume that an exercise machine carries financial and performance risks; therefore, it makes sense that the athlete endorser in Martin's (1996) research was viewed favorably. Since an athlete is considered in good shape and excels in sports, he is viewed as an expert in athletic products (Lynch & Schuler, 1994).

Till and Busler (2000) also evaluated whether there is a difference in responses toward different types of products (energy bar and candy bar) based on endorser type (an athlete and an actor). Their findings were similar to Martin's (1996). Till and Busler found that overall, the athlete was considered the best endorser of the energy bar. In addition, participants had a significantly more favorable attitude toward the energy bar when the athlete endorsed it than when the attractive actor did. There were, however, no significant differences between the expert and the celebrity when they endorsed the candy bar (Till & Busler, 2000).

Since the risks associated with energy bars include performance risks (Till & Busler, 2000), one could explain the results using the theory of endorser effectiveness. According to Friedman (1977), an expert endorser is the most effective endorser for products that are considered high in physical, performance, and/or financial risks. In this study, the expert endorser was the athlete. Yoon and Choi's (2005) findings were similar to Till and Busler's (2000). They found that sports models were effective endorsers for

sports products because they were perceived as experts of the products (Yoon & Choi, 2005).

Mehta et al.'s (2001) findings, however, contradicted the theory of endorser effectiveness. They used several products including beauty care and hair cut services. Upon administering a survey to their participants, they found that beauty care and hair cut services were high in psychological, social, and financial risks. By following the theory of endorser effectiveness, one would expect that participants would be mostly influenced by celebrity endorsers because of the identification process related to reducing these types of risks (Friedman, 1977). Instead, Mehta et al. (2001) found that the most influential endorsers were experts. In fact, consumers ranked the expert endorser as the most influential endorser for all the products, no matter what risks the products carried (Mehta et al., 2001).

The difference in Mehta et al.'s (2001) findings could be contributed to the location where the study was administered. The researchers conducted their study in Singapore. Could it be that the difference in cultures led to different results? Could it be that Singaporean customers perceive expert endorsers as the most effective endorsers no matter what product they endorsed?

This, however, did not seem to be the case with Chinese customers. Wang, Hsieh, and Chen (2002) conducted an experimental study with Taiwanese students to evaluate who was the most effective tour guide to use in a travel brochure guide. Based on the previous studies and the risks associated with planning a vacation (i.e., performance and financial), Wang et al. (2002) assumed that the expert endorser would be the most

effective endorser. They specifically wanted to find out what type of expert endorser would be the most influential.

Wang et al. (2002) used two types of endorsers (the tour leader and the tour company's CEO) and a control group. They considered both of the endorsers as experts; however, they believed that the company's CEO had more credibility and expertise. Therefore, Wang et al. hypothesized that the CEO would elicit more influence than the tour leader. In addition, they hypothesized that the tour leader would elicit more influence than the control group.

To test their hypotheses, Wang et al. (2002) randomly assigned 1,004 students to nine groups. Each of the groups had different treatments, and one group did not have any treatment. After running a t-test, Wang et al. found that there was a significant difference in purchase intentions between using the CEO endorser and the tour leader, especially when there were no personal resumes accompanying the endorsers in the ad. The CEO was a more effective endorser than the tour leader.

After conducting MANOVA, the researchers also found support for their second hypothesis (Wang et al., 2002). The tour leader elicited greater purchase intentions than the control group. Upon including the tour leaders' photo and a brief resume, the researcher found even greater influence for the tour leader than the control group (Wang et al., 2002).

Even though Wang et al. (2002) did not use the theory of endorser effectiveness to explain their findings, their findings were similar to Lipscomb (1985) who used the theory of endorser effectiveness. Just like Wang et al., Lipscomb also compared the effectiveness of two different types of expert endorsers (pharmacist and the physician).

Using the theory of endorser effectiveness, Lipscomb found that the physician was more influential than the pharmacist. She concluded that an individual that is perceived to be more of an expert would elicit more influence for products that are high in financial, physical, or performance risks.

A few years later, Wang (2005) conducted another study evaluating endorser effectiveness. This time, he investigated the effectiveness of two types of endorsers (expert movie critics and typical consumer) on consumers' movie watching behavior. Part of the study revealed that typical consumers were more effective in getting other consumers to go and watch a specific movie than the expert movie critics. Wang's results can also be explained using the theory of endorser effectiveness. A movie has pleasurable characteristics (Wang, 2005). It does not seem to carry high financial, performance, physical, social, and/or psychological risks. It is similar to the bag of chocolate chip cookies that Friedman (1977) used in his study. Friedman found that the bag had very little risk; therefore, he predicted that the typical consumer would be the most effective endorser, and he was right.

A year after Wang's (2005) findings, Biswas, Biswas, and Das conducted a study whose findings could also be explained using the theory of endorser effectiveness. Biswas et al. (2006) compared the influence of an expert versus a celebrity endorser on two products (the computer and the treadmill). They considered the computer a complex technology and the treadmill a low technology product. After administering a survey to 117 students and conducting ANOVA statistics, Biswas et al. found that for the complex technology product, there was a product-endorser type interaction. The results were magnified when the consumers were highly knowledgeable. The expert endorser

dramatically decreased the perceived financial and performance risks more so than the celebrity endorser. For the product with low risk technology, Biswas et al. (2006) did not find any interaction.

Biswas et al.'s (2006) findings were not surprising. Over the past 40 years, many researchers have used complex technology products to test Friedman's theory of endorser effectiveness (e.g., Freiden, 1982, 1984; Harmon & Coney, 1982; Woodside & Davenport, 1974). All of the studies, except for Freiden's (1984), supported Friedman's theory and found the expert to be the most influential endorser for a complex technology product.

Conclusion

Chapter 2 has provided a comprehensive look at DTCA and the theory of endorser effectiveness. In the process, this chapter presented a discussion on findings from many studies that revealed a difference in responses toward different types of products based on endorser type (i.e., expert, celebrity, and typical consumer). The next chapter provides a detailed description of a research design that the researcher used to evaluate whether there was a difference in responses toward an allergy prescription medication ad based on the endorser type.

CHAPTER 3. METHODOLOGY

The purpose of this study was to identify whether there was a difference in responses toward a prescription drug ad based on endorser type. The study used the theory of endorser effectiveness, which is part of a more known theory called the match-up hypothesis theory. This chapter unravels the research design that the researcher used to answer the following research questions.

Research Questions

Research Question 1: Is there a relationship between the type of endorsement used in a prescription drug ad and ones attitudes toward the ads?

Research Question 2: Is there a relationship between the type of endorsement used in a prescription drug ad and ones attitude toward the advertised drug?

Research Question 3: Is there a relationship between the type of endorsement used in a prescription drug ad and ones likelihood of asking their physician about the drug in the ad?

Research Question 4: Is there a relationship between the type of endorsement used in the prescription drug ad and ones likelihood of asking their physician to prescribe the drug in ad?

Null Hypotheses

Null Hypothesis 1a. A respondent's rating of how interesting the prescription allergy drug ad is independent of the type of endorser in the ad.

Null Hypothesis 1b. A respondent's rating of how effective the prescription allergy drug ad is independent of the type of endorser in the ad.

Null Hypothesis 1c. A respondent's rating of how informative the prescription allergy drug ad is independent of the type of endorser in the ad.

Null Hypothesis 1d. A respondent's rating of how believable the prescription allergy drug ad is independent of the type of endorser in the ad.

Null Hypothesis 1e. A respondent's rating of how clear the prescription allergy drug ad is independent of the type of endorser in the ad.

Null Hypothesis 2. A respondent's attitude toward the advertised drug is independent of the type of endorser in the ad.

Null Hypothesis 3. A respondent's likelihood of asking physicians for more information about the advertised drug is independent of the type of endorser in the ad.

Null Hypothesis 4. A respondent's likelihood of asking physicians to prescribe the advertised drug is independent of the type of endorser in the ad.

Research Design

The study used a quantitative correlational research approach. This was the most effective approach because the study evaluated the relationships between different variables (Glatthorn & Joyner, 2005). Also, this was the first study that evaluated the product endorser type interaction with a prescription drug as the product. Sproull (1995) suggested that before conducting a complex true experimental design, researchers should take the initial step of conducting a correlational study. Sproull noted that even though a high correlation coefficient does not mean a cause-effect relationship, a low correlation

coefficient means that there is only a slight chance that the independent variable is affecting the dependent variable (Sproull, 1995). Thus, the findings from this study can act as a building block for future researchers who will most likely conduct a true experimental design to evaluate cause and effect.

Sample

Target Population

The target population of this study was adult patients of an allergy and asthma clinic. The clinic was located in the southern part of the United States. Some of the patients visited the clinic for their regular allergy check up, while others came for their regular allergy shots. There were several reasons why the study used allergy patients as the target population.

The researcher wanted to evaluate the opinions and attitudes of a diverse group of patients. According to the American Academy of Allergy, Asthma and Immunology (n.d), allergy ranks as the sixth chronic disease in the United States. About half of the American public suffers from allergies (Matricardi et al., 2002), and about 20 million Americans suffer from asthma (AAFA, 2005). Many of them live in the city where the study took place. In fact, a year ago, the Asthma and Allergy Foundation of America ranked the city as one of the worst cities in the nation to live in for fall allergies (AAFA, 2007).

With so many people suffering from allergies in the city where the study took place, the study's sample included a diverse group of patients from different age brackets,

ethnicities, educational backgrounds, and genders. This is important because the findings reflected the attitudes and behavioral intentions of everyday patients.

Another reason for using adult allergy patients in the study had to do with the disease itself. Many people have allergies, so participants in this study were not embarrassed to take part in it. This wouldn't be the case if the study highlighted another disease, such as mental illness or sexually transmitted diseases. These diseases are too personal, which could lead patients to either deny participating in these kinds of studies or give misleading answers (Fowler, 2002). Allergies do not seem to carry any stereotypes because, according to the American Academy of Allergy, Asthma and Immunology (n.d.), many people have them.

The final reason for using allergy patients in this study had to do with the fact that the researcher wanted to measure accurate behavioral intentions of respondents that evaluated the ad. In order to truly do that, the researcher needed to use respondents that found the product important to them (Baker & Churchill, 1977). Since the product in the ad was prescription allergy medication, it made sense to use allergy patients as the target population. These patients were highly involved in the situation because they were always looking for effective ways to relieve their allergies. Using allergy patients increased the chances of obtaining accurate answers about the patients' attitudes and behaviors toward the ads and toward the advertised prescription allergy medication.

Sampling Frame

Malhorta (2004) defined sampling frame as the list that researchers used to extract their sample. The telephone directory is a common sampling frame. There are problems, however, with using the telephone directory. There are some people that do not have

telephones or do not have their numbers listed. Therefore, the telephone list does not give everyone in the population an equal chance of taking part in the study (Malhorta, 2004). In this research, the sampling frame was all patients that visited the allergy clinic during the data collection period.

Sampling Method

To recruit adult patients to take part in the study, the researcher used non-probability sampling, specifically purposive sampling. By using non-probability sampling, patients were not randomly selected, so not every adult allergy patient at the clinic had an equal chance of being part of the study (Black, 1999). However, patients were randomly assigned to the different treatment groups and control group. To randomly assign patients, the ads were stacked in alternating order with every fourth ad repeated. Patients that walked into the clinic received the ad at the top of the stack, thus resulting in a random distribution. See Appendix A for a copy of the ads.

Protecting the privacy of patients and getting approval to access the patients were some of the reasons for choosing non-probability sampling. Using non-probability sampling did not require a complete identification list of all patients in the clinic. This is because the researcher was not randomly selecting patients from the clinic's whole population. During the data collection period, the researcher asked each adult patient that walked into the waiting room if they would like to take part in the study. The researcher did not know the name or any personal information about the patients.

Other reasons for choosing non-probability sampling were cost and time. At the time that the study was conducted, the researcher was a full-time student, a full-time employee, and a mother. According to Cooper and Schindler (2006), non-probability

sampling is less time consuming, less expensive, and more feasible than probability sampling.

Purposive sampling. As for the specific type of non-probability sampling, the study used purposive sampling. In purposive sampling, the researcher recruits subjects with a specific criterion that are essential for the study (Cooper & Schindler, 2006). The specific criterion for this study was to collect data from actual allergy patients in an allergy and asthma clinic. Many researchers have used students to test their hypotheses (Biswas et al., 2006; Freiden, 1984; Lipscomb, 1985; Young, Lipowski, & Cline, 2005). This study did not use students because students do not truly represent the different types of patients. Once the patients agreed to take part in the study, they were then randomly assigned to the different treatment and control groups. They did not receive any incentives to take part in the study.

Sample Size

To find the sample size for determining the means, the researcher used a sample size computation calculator. For this study, the population standard deviation is estimated to be .5 out of a 5 point scale. With an allowable sampling error of .25 at 95% confidence, the computed sample size is 16 per gender/endorser combination, for a total of at least 128 respondents. Since every adult patient that entered the clinic during the 3-week test period had the chance to take a survey, the sample size exceeded that total.

Access

The study accessed allergy patients through an allergy and asthma clinic. The clinic was open for patients on weekdays and on Saturdays. The researcher received signed approval from the physician owner to access the clinic's patients. Accessing

allergy patients through an allergy and asthma clinic was the most effective, feasible, and realistic way of recruiting them and capturing their opinions about the allergy ads. This was also the least expensive and less time-consuming way to get access to allergy patients. Instead of trying to look for and locate adult allergy patients, the researcher had access to a pool of allergy patients at one time, which saved time and money.

Approaching the Patient

Two types of patients took part in the study. Those that came in for their allergy check-up appointments, and those that came in for their weekly or bi-weekly allergy shots. Children were not included in this study. In the original proposal, the proposed sample size was 128; however, during the data collection period, the number of patients taking part in the study exceeded that amount. The final sample size was 204, with 50 to 51 patients belonging to each of the groups (expert, typical consumer, celebrity, and no endorser). If the same patients who already took part in the study revisited the clinic during the data collection period, they were excluded from taking the survey again. See Appendix B for a complete copy of the surveys.

The researcher has obtained approval from the physicians in the clinic for approaching and debriefing patients. Patients that came to the clinic for their allergy check-up appointments were required to sign in at the receptionist's window while patients that came to the clinic for their weekly allergy shots were required to sign in at the nurse's station. As the patients checked in for their regular appointments, using a prepared script, the receptionist informed each patient that there was a Ph.D. student in the office working with the physicians on her dissertation. The receptionist also informed

the patients that the student will be approaching them to see if they would like to look at a prescription allergy ad and take a short survey. There were times, however, when the receptionist could not introduce the study to the patients because she was busy helping other patients. To make sure that every patient was aware of the study and the researcher's presence in the waiting room, a note card of the approved script was taped next to the sign-in sheet.

For the patients that came in for their weekly allergy shots, the nurses informed them about the study and let them know that the student would approach them in the waiting room after they took their shots. There were also times when the nurses were too busy to do that, so a note card of the approved script was taped on the table where the patients received their shots. See Appendix C for a copy of the standard script used by the receptionist and the nurse when introducing the patients to the researcher and to the study.

After taking their allergy shots, the clinic required these patients to wait 20 minutes in the waiting room so that the nurses could monitor them in case they developed any reactions to the shots. During that time, the researcher approached the patients and asked them to complete the survey. As for the patients that came in for their allergy check-up appointments, most of them completed the survey before their appointments because they had plenty of time to do so. There were few times, however, when the patients started a survey, and they were called in for their appointments. In these instances, they took the survey with them and then handed it in as they were leaving their appointments.

When approaching the patient, the researcher introduced herself as a Ph.D. student working on her dissertation. She then asked the patient if they would like to take part in the study by evaluating a prescription allergy ad and taking a very short survey. The researcher informed the patients that taking part in the study was voluntary, that no medical or personal questions were asked, that the survey was anonymous, and that the patients could withdraw from the study at anytime while they were taking the survey. See Appendix C for the introduction script.

The researcher did not disclose the specific purpose of the study at the forefront of the research because it was likely that some patients would deny being influenced by certain types of endorsers, even though in reality, they might have been. By not disclosing the specific purpose, the study captured the patient's true attitudes and behavioral intentions. Several researchers evaluating the theory of endorser effectiveness have also initially withheld the true purpose of the study, so that they can get honest feedback from their respondents (e.g., Fireworker & Friedman, 1979; Friedman, 1977). For this study, the physicians in the clinic have formally approved the researcher's approach.

The researcher also did not disclose at the forefront of the research that the drug and the ads were fictitious because the researcher wanted to get the patients' real attitudes and behaviors toward prescription advertisements. The researcher used a fictitious drug because she wanted the patients to be exposed to a drug that they had no knowledge or experience with, so that their responses would not be influenced or biased by their past experiences with the drug. Young et al. (2005) also avoided biases by using a fictitious drug and presenting it as a real drug when evaluating their students' behaviors and

attitudes toward a prescription drug ad. For this study, the physicians in the clinic approved the researchers' approach.

After the patients accepted taking part in the study, the researcher assigned them to the appropriate group. During that time, the researcher instructed the patients to put the completed survey in a designated locked survey drop-box in the waiting room and to hand the ad to her. The ads were placed in a plastic cover, which not only protected the ads but also ensured that the patients did not accidentally walk out with them. To protect against influencing the patients, the researcher did not talk to the patients while they were taking the survey.

The researcher also asked the patients to pick up one of the folded papers, which was located next to the designated drop box, after they complete the survey. The paper was a letter that completely explained to the patients the specific purpose of the study and revealed to them that the drug and the ad in the study were fictitious. The letter also included the researcher's contact information, in case the patients had any questions.

In the letter, the researcher asked the patients not to discuss the study with any of the allergy patients in the clinic until after the researcher completed collecting the data (November 17, 2008). This was because some allergy shot patients that already took part in the study revisited the clinic several times during the data collection period. Therefore, it was essential that these patients did not reveal the specific purpose of the study to future participants. The researcher also asked participants to refrain from reading the letter until they leave the waiting room. See Appendix D for a copy of the debriefing letter.

The researcher chose to debrief the patients through a written letter, so that the specific purpose of the survey was not disclosed to other potential participants in the waiting room. Patients walked into the waiting room at different times and took the survey at different times. While one completed the survey, another one started it. So, to protect against biases, the researcher provided the patients a brief letter that explained the specific purpose of the study. The letter was folded. On its cover, the researcher asked the patients to read the letter when they leave the waiting room. This prevented the possibility of patients discussing the purpose of the study in the waiting room while others were taking the survey.

Using a written letter was also the best approach to debrief patients because it was impossible for the researcher to debrief every patient that took the survey. Many times while one patient was completing a survey, the researcher was busy recruiting another patient. By having the letter readily available, the researcher ensured that every patient received the information that revealed the specific purpose of the study.

Ad/Instrumentation

Ad Design and Content

To control some of the extraneous variables in this study, the four ads in the study were similar in design and content (Sproull, 1995). This way, the researcher could truly test if a relationship existed between the independent and dependent variables.

Templates. As discussed earlier, to obtain the patients' accurate opinions and behavioral intentions toward the ads, the researcher presented each ad to the patients as a real prescription drug ad. To do that, the researcher worked with a professional designer

on developing four colored fictitious ads of the same fictitious allergy prescription medication. The ads were printed on a glossy text paper to give it the same look and feel as other real prescription drug ads in today's magazines.

Just like Wang et al. (2002) and Young et al. (2005), the researcher used already developed advertisements as templates when designing the ads. For the placement of the endorsers and their quotes, the researcher followed the Lipitor ad that featured Dr. Robert Jarvik. For the content of the ad, the researcher used the same content as the Xyzal ad that appeared in the May 2008 issue of *Cooking Light*. The placement of the content in the front and back page of the ads was also similar to the placement of the content in the Xyzal ad.

The researcher chose to emulate Jarvik's Lipitor ad design template for several reasons. Most importantly, the ad included features that were essential to this study. It had an endorser on the left top corner, a quote from the endorser on the right hand corner, and a caption introducing the endorser on the right. The ad also looked professional, which was an important factor in this study because a poor ad design could have biased the results. Marketing professionals at Pfizer probably tested and refined the Lipitor ad several times before publishing it. Finally, the original study that introduced the theory of endorser effectiveness included the same features that were included in the Lipitor ad (Friedman, 1977).

As for content, the study used already developed content to make the ad look professional and real. All of the real direct to consumer print ads of prescription drugs are heavy in content. The front pages usually have some medical terms while the back pages are inundated with medical terms. The researcher does not have any background in

writing advertisement content for prescription drugs ads, so the only way to develop quality content was to use already developed content. The content, however, was slightly altered to fit the purpose of the study. For example, the name of the prescription allergy medication in the ads was fictitious, and the name of the pharmaceutical company was not used. This reduced possible biases respondents may have toward the real drug and toward the pharmaceutical company when completing the survey (Friedman, 1979; Young et al., 2005).

The study specifically used the same content as the Xyzal ad because at the time the study was conducted, Xyzal was one of the newest prescription allergy medications. The FDA approved it in 2007 (“FDA,” 2007). The researcher did not want the patients to recognize that the content of the ad in the study was similar to an already developed ad because that might bias the patients’ opinions and behaviors toward the ad and drug in the study. As compared to other allergy prescription medications, Xyzal has not been around long enough for consumers to recognize it or recall it. In fact, at the time the study was conducted, there was evidence that Xyzal was not as advertised as the other well-established prescription allergy medications (“Cooking,” 2007; “Rodale,” 2007; “Southern,” 2007).

Colored ads. The researcher used colored ads in her study because she wanted the ads to resemble real prescription drug print ads, and all of the prescription drug print ads that the researcher has evaluated were colored. The researcher used the color blue because according to research, in the western culture, blue stood for dependability, trustworthiness, sincerity, and high quality (Jacobs, Keown, Worthley, & Kyung-II, 1991). When choosing a prescription allergy medication, it is safe to say that patients

want an allergy drug that would relieve them from their allergies, that is dependable, that is sincere, and that is of high quality. Cheskin and Masten's study also found that blue is associated with healthy products, such as healthy foods and exercise equipment (as cited in Aslam, 2006). This strengthened the researcher's choice of using blue, since prescription allergy medication relieves patients from allergies, and ultimately improves their health. There is also early research that associates blue color with healing diseases ("Healing," 1908). This also fits with the allergy prescription medication because the goal of the medication is to heal patients from their allergies.

Fictitious drug name. The fictitious drug name is *Seigrella*. It is allergies spelled backward, and it is as creative as other allergy medications, such as Xyzal, Claritin, Allegra, and Singulair. The name came about after a brainstorming session with a physician, a marketing professional, and a young college student.

Expert and typical consumer models in the ads. The study used four ads. Three of these ads had an endorser, and one of them did not. The ad with the expert endorser and the ad with the typical consumer endorser used the same model. The only difference was that the model playing the expert endorser role wore a white coat to resemble a physician, while the same model playing the typical consumer role dressed casually to resemble a typical person. Using the same model to play both parts eliminated any extraneous variables that might have biased the findings. For example, some extraneous variables that might influence the findings are differences in physical attractiveness (Miciak & Shanklin, 1994; Till & Busler, 2000) and in gender (Caballero & Solomon, 1984; Kanungo & Pang, 1973).

As for the endorser's gender, the researcher used a male. There were several reasons for using this gender. The expert endorser is supposed to resemble an average physician. At the time the study was conducted, the proportion of male physicians in the United States was greater than female physicians. According to the American Medical Association, in 2006 there were about 665,647 male physicians in the United States (American Medical Association [AMA], 2006b) as compared to 256,257 female physicians in the United States (AMA, 2006a). In addition, the Lipitor ad design that this study emulated also featured a male physician. The male endorser also worked for the typical consumer because allergy is a disease that is not gender specific. Using a male endorser, therefore, did not bias the results or negatively affect the model's credibility.

As for the endorser's age, Cline and Young (2004) conducted a content analysis to evaluate DTCA of prescription drugs in magazines. The researchers evaluated prescription advertisements in 684 magazine issues between January 1998 and December 1999. They found 225 DTCAs, and 35 of them were for allergy ads. In evaluating these ads, Cline and Young found that the average age of the models was adults as compared to young and old. This study used these findings and chose an endorser that was between 35 to 55 years old.

As for the endorser's race, the researcher followed the finding by Cline and Young (2004) and used a Caucasian endorser. Cline and Young found that close to 89% of the allergy ads they evaluated used a Caucasian endorser. None of the ads used an African American endorser or a Hispanic endorser or an Asian endorser. The researcher wanted the ad to resemble a real prescription allergy ad, and since the patients were

accustomed to seeing a Caucasian endorser for allergy medications, it made sense to use a Caucasian endorser.

Finally, for the endorsers' first and last names, the researcher chose "Robert Brown" because they were in the top five of the most common first and last names in the United States (U.S. Census Bureau, n.d.; 2000). By using a common first and last name, the researcher reduced the chances of any stereotypes associated with the names. This again helped measure the endorsers' effect on consumers' attitudes and behaviors rather than measuring the effect of endorsers' names on consumers' attitudes and behaviors.

Celebrity endorser in the ad. As for the celebrity endorser, the study used Tom Selleck. Selleck has been used in another study that evaluated the effectiveness of endorsers on different products (Kamins, 1990). Kamins used him after conducting a pre-test that identified Selleck as the most "attractive and familiar" (p. 7) celebrity from a pool of 20 celebrities. Ohanian (1990) also found that respondents mentioned Selleck most frequently when they were asked to name a familiar celebrity endorser that has not endorsed any products. Other reasons for using Selleck was the fact that at the time the study was conducted, he was not a controversial celebrity, he was not in the news for any bad behavior, and he was popular with older and younger people. He starred in *Magnum P.I.* in the 1980s (a show that made him famous with the baby boomers generation) and in a popular NBC series, *Las Vegas* in 2007 (a show that introduced him to the younger generation). To see a copy of the ads, go to Appendix A.

Instrument

The study used a modified version of a survey developed by Dr. Hershey Friedman, the founder of the theory of endorser effectiveness. It was tested for validity

and reliability. Dr. Friedman gave the researcher written permission to modify his survey. The survey used a series of questions that evaluated the three components of an effective advertisement: “cognitive, affective, and conative” (Lavidge & Steiner, 1961, p. 61). In the cognitive stage, consumers first learn about the product, in the affective stage, consumers use emotion to evaluate the product, and in the conative stage, consumers take action to purchase the product (Lavidge & Steiner, 1961).

In his survey, Friedman (1977) followed Lavidge and Steiner’s (1961) advice and measured the cognitive stage with such items as knowledgeable, believability, and informative. For the affective stage, Friedman evaluated the respondents’ overall attitude toward the ad and the product. Finally, for the conative stage, Friedman measured the respondent’s intentions to purchase the products.

Following Lavidge and Steiner’s (1961) hierarchy of effects strengthened the credibility of Friedman’s survey because it showed that the survey measured all the dimensions that were important in evaluating an effective advertisement. Other researchers agreed with that observation and have also used a modified version of Friedman’s survey when evaluating endorsers’ effectiveness (e.g., Atkin & Block, 1983; Crisci & Kassino, 1973; Fireworker & Friedman, 1977; Freiden, 1982, 1984; Kerin & Barry, 1981; Lipscomb, 1985; Wang, 2005; Wang et al., 2002; Woodside & Davenport, 1974). For a complete copy of this study’s modified survey, see Appendix B.

Data Collection

In this study, the researcher needed to collect data to identify whether there was a difference in responses toward a prescription drug ad based on endorser type. To do that,

the researcher approached each adult patient that walked in the waiting room during the data collection period. The researcher randomly assigned each of the patients to one of the four groups (expert, celebrity, typical consumer, and no endorser). The researcher explained the general purpose of the study and asked if the patients were interested in taking part in the study. After the patients filled out the survey, they placed it in a designated drop box in the waiting room and handed the plastic folder with the ad to the researcher. They also picked a folded paper that explained the specific purpose of the study and also revealed that the drug and ad in the study were fictitious.

Treatment/Intervention

Independent Variables

The independent variables are those that influenced the dependent variables (Cooper & Schindler, 2006). In this study, the independent variables were the different endorser categories and the control group. Specifically, the independent variables were the expert endorser, celebrity endorser, typical consumer endorser, and no endorser. These variables were pertinent in answering the research questions and in testing the hypotheses.

Dependent Variables

The dependent variables were attitudes toward the ad, attitudes toward the allergy drug in the ad, intentions to ask a doctor for more information about the advertised allergy drug, and intentions to ask a doctor to prescribe the advertised allergy drug. The study used these variables because each of them tested a specific hypothesis in the theory of endorser effectiveness.

The study's first variable, "consumers' attitude toward the ad" helped disguise the study's true purpose (Friedman, 1977). Friedman noted that this was the best way to initially not reveal the specific purpose of the study. Initially, the researcher told the participants that the study was about evaluating an ad for an allergy prescription drug. This question supported that. Also, most of the studies that used the theory of endorser effectiveness have evaluated this variable, and many have found a relationship between attitude toward the ad and the product-endorser type interaction (e.g., Atkin & Block, 1983; Fireworker & Friedman, 1977; Freiden, 1984; Friedman, 1979).

The study also used the variable "attitude toward the product" because it was one of the factors that were essential in measuring interactions between specific products and specific endorser type. Several researchers studying this topic measured this dependent variable. Many of these studies found that consumers viewed the product in the ad more favorably when there was a match between the product type and the endorser type (Atkin & Block, 1983; Freiden, 1982; Friedman, 1977; Friedman et al., 1977; Kerin & Barry, 1981; Wang, 2005).

The third and fourth variables measured the patients' behavioral intentions. All of the product-endorser type interaction studies evaluated consumers' behaviors by measuring the consumers' purchase intentions (e.g., Atkin & Block, 1983; Fireworker & Friedman, 1977; Freiden, 1984; Friedman, 1977; Friedman et al., 1979; Lipscomb, 1985; Settle, 1972). This would not work in this study because patients could not purchase a prescription drug without a prescription from a qualified health care practitioner, such as a physician. Many studies about DTCA of prescription drugs evaluated consumers' behaviors by measuring if patients asked their doctor about the drug or if they asked their

doctor to prescribe the medicine in the ad (Menon, Deshpande, Zinkhan, & Perri, 2004; Young et al., 2005).

Data Analysis

To test the hypotheses in this study, the researcher used SPSS 17.0 software and conducted Chi-Square Test of Independence. Chi-Square Test of Independence is used to evaluate relationships (Norusis, 2006). When using Chi-Square Test of Independence, the only assumption that must be met is that each patient needs to belong to only one group, which was the case in this study (Norusis, 2006).

Validity

Validity involves using a scale that actually measures what the researcher wants to measure (Cooper & Schindler, 2006). In this study, the researcher used a modified version of a survey created by Dr. Hershey Friedman in 1977. Dr. Friedman developed this survey to test the theory of endorser effectiveness. Dr. Friedman's dissertation did not specifically discuss the survey's validity. However, through an e-mail correspondence with the researcher, Dr. Friedman noted that he found that his survey had face validity (H.H. Friedman, personal communication, June 12, 2008).

Face validity is one of several tests that evaluate the scale's validity. Other tests include content validity and construct validity. In this study, the researcher tested for the survey's face and content validity.

Face Validity

Surveys have face validity when lay people believe that the survey measures what it is supposed to measure (Litwin, 1995). Testing for face validity is easy. Researchers simply ask representatives of the population of interest, such as the researchers' mothers, fathers, siblings, and spouses to evaluate if the survey measures what the researcher wants it to measure (Litwin, 1995). Dr. Friedman, the survey's founder, noted that his survey had face validity (H.H. Friedman, personal communication, June 12, 2008). The researcher further tested face validity by conducting a pretest and asking friends and family members to examine the survey for face validity. The researcher then made the appropriate changes to ensure face validity.

Content Validity

Surveys have content validity when the researcher can demonstrate through the expert opinions that every item in the survey is appropriate to answering the research questions and that no items in the survey are missing (Litwin, 1995). For already developed surveys, researchers can demonstrate content validity by evaluating if other experts in the field have used the same or similar items when conducting similar studies. This shows that the experts believe that the items are appropriate to measure a specific theory.

Expert researchers who evaluated the effectiveness of different types of endorsers on different types of products have used some or all of the items in Friedman's survey (e.g., Atkin & Block, 1983; Fireworker & Friedman, 1977; Freiden, 1982, 1984; Kerin & Barry, 1981; Lipscomb, 1985). It is important to note, however, that each of these researchers have modified Friedman's survey to fit the specific purpose of their study.

For example, Kerin and Barry (1981) wanted to compare the effectiveness of expert endorser and an unidentified model on consumers' banking behaviors. They tested that by using a modified version of Friedman's survey.

Even though researchers have not used an exact copy of Friedman's survey, the survey still seems to have content validity. It has been around for 31 years, and it has become the framework to use for studies that evaluate the effectiveness of different types of endorsers on different products. Every researcher that evaluated this topic has picked items from Friedman's survey, modified it, and used it (e.g., Atkin & Block, 1983; Fireworker & Friedman, 1977; Freiden, 1982, 1984; Kerin & Barry, 1981; Lipscomb, 1985).

There are, however, several weaknesses to Friedman's survey that can affect its content validity. As stated above, no researchers have ever used an exact copy of the survey in their studies. Could it be that there are some factors in the survey that are not appropriate to measuring the theory of endorser effectiveness? To find out, the researcher conducted content validity testing by getting input from the chairman of her committee and other committee members who are marketing experts. After getting their input, she modified the survey.

Reliability

In its simplest form, reliability is a measurement of consistency (Cooper & Schindler, 2006). There are several tests to measure reliability in quantitative research. This study used the internal consistency reliability test. In internal consistency test,

researchers evaluate if the items in the survey measure the same concept (Parasuraman, Zeithaml, & Berry, 1994).

There are different types of internal-consistency reliability tests (Cooper & Schindler, 2006). The most popular one is the Cronbach's alpha. Cronbach's alpha evaluates how well a set of variables measure a single concept (Cooper & Schindler, 2006). Terblanche and Boshoff (2008) noted that in order for a scale to be acceptable and useable, Cronbach's alpha should be greater than or equal to .70.

To evaluate the instrument's reliability, the researcher used SPSS 17.0 and calculated Cronbach's alpha, which was .845, making it a reliable instrument. Dr. Friedman, the survey's founder, also calculated Cronbach's alpha and also found the survey to be highly reliable (H.H. Friedman, personal communication, June 12, 2008).

Ethical Considerations

The researcher needed to respect the patients' time, and her study could not interrupt the clinic's operation. The researcher did that by developing a short survey and approaching patients in the waiting room. The researcher needed to respect the patients' privacy. That was evident in the survey's questions, where the researcher did not ask for the patients' names or for any personal or medical information. Finally, the researcher needed to be careful not to influence the patients' opinions, attitudes, and behaviors (Scott & Davis, 2007). According to Fowler (2002), this could happen because the researcher was in personal contact with the respondents. The researcher overcame this by having a script ready when approaching the patients, moving away from the patients

when they were filling out the survey, and not interacting with the patients while they were taking the survey. Once the patients completed the survey, they were then debriefed.

Summary

Chapter 3 provided a comprehensive description of the study's methodology. The study used a correlational research methodology to evaluate five null hypotheses. The target population was patients of an allergy clinic in a southern city in the United States. The study used non-probability sampling and randomly assigned participants to the four different groups. The study also used Chi-Square Test of Independence to test the null hypotheses

CHAPTER 4. RESULTS

The purpose of this study was to identify whether there were differences in responses toward a prescription drug ad based on endorser type (expert endorser, typical consumer endorser, celebrity endorser). The study used data that was collected from patients in an allergy clinic. The patients were randomly assigned to one group (expert endorser, typical consumer endorser, celebrity endorser, or no endorser). This chapter reviews the research questions and the null hypotheses and reveals the results of the Chi-Square Tests of Independence.

The study used a five-point scale to collect data; however, after collecting the data and running Chi Square Test of Independence for each of the hypotheses, the five-point scale was merged into a three point scale. This is because with a five point scale, running Chi Square Tests of Independence resulted in many cells having an expected count less than five, which according to Norusis (2006) could lead to biased findings. Norusis recommended combining some of the rows and columns. The researcher did that by combining the negative category into one (i.e. strongly disagree/disagree) and the positive category into another (i.e., strongly agree/agree). The neutral category stayed the same. There were also few people in the younger and older age groups, so the age category was combined to three categories, those between the age of 18 and 34, those between the age of 35 and 49, and those above 50.

Demographics

Of the 204 respondents, 102 were males, and 102 were females. These respondents were randomly assigned to four different groups: the expert endorser, the typical consumer endorser, the celebrity endorser, and the no endorser.

Table 1. Type of Endorser * Gender Descriptive Statistics

		How Many Males and Females Belonged to Each Group?		
Count		Gender		Total
		Male	Female	
Type of	Expert endorser	26	26	52
Endorser	Typical endorser	22	29	51
	Celebrity endorser	22	28	50
	No endorser	32	19	51
Total		102	102	204

The distribution of male and female was normal for the expert endorser group, where there were 50% male respondents and 50% female respondents. As for the typical endorser group, the sample size was made up of 43% males and 57% females. This was similar to the celebrity endorser group, where 44% of the respondents were males, and 56% were females. The biggest variation was in the no endorser group, where 63% of the respondents were males, and only 37% were females.

As for the age of the respondents, 20.1% (41) were between the age of 18 and 34, 41.7% (85) were between the age of 35 and 49, and 38.2% (78) were above 50.

Table 2. Allergy Shot Patients Descriptive Statistics

		Are You Getting an Allergy Shot Today?			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	177	86.8	86.8	86.8
	No	27	13.2	13.2	100.0
Total		204	100.0	100.0	

Of these respondents, 86.8% (177) visited the clinic for their weekly or bi-weekly allergy shots, and only 13.2% (27) visited the clinic for an allergy check-up appointment. One of the reasons for this variation could be the slow economy. The data collection took place at a time when the United States was on the brink of entering a recession. This may have caused patients to postpone their allergy check-up appointments. On the other hand, the patients who take their weekly or bi-weekly allergy shots have been diagnosed with serious allergies and are receiving relief by getting their allergy shots. They are committed to their treatments. This could then explain why the majority of the sample size was made up of allergy shot patients.

Results

Research Question 1

Is there a relationship between the type of endorsement used in a prescription drug ad and ones attitudes toward the ads?

To answer this question, the researcher developed five null hypotheses. The researcher used Chi-Square Test of Independence to test if a significant difference in

responses existed between each of the five dependent variables and the different endorser types.

Null hypothesis 1a. Hypothesis 1a states that the respondent's rating of how interesting the prescription allergy drug ad is independent of the type of endorser in the ad. Table 3 and Table 4 summarize the results. Since the p-value is .499, which is above the significance level of .05, the null hypothesis was not rejected. There was insufficient evidence to conclude that one's rating of how interesting the prescription allergy drug ad was dependent on the type of endorser in the ad.

Table 3. Crosstabulation for H1a

		How Interesting is the Ad?				
			Negative	Neutral	Positive	Total
Type of Endorser	Expert endorser	Count	7	21	23	51
		% within type of endorser	13.7%	41.2%	45.1%	100.0%
	Typical endorser	Count	8	22	21	51
		% within type of endorser	15.7%	43.1%	41.2%	100.0%
	Celebrity endorser	Count	10	17	23	50
		% within type of endorser	20.0%	34.0%	46.0%	100.0%
	No endorser	Count	15	17	19	51
		% within type of endorser	29.4%	33.3%	37.3%	100.0%
Total		Count	40	77	86	203
		% within type of endorser	19.7%	37.9%	42.4%	100.0%

Table 4. Chi Square Test for H1a

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.356 ^a	6	.499
Likelihood Ratio	5.182	6	.521
Linear-by-Linear Association	2.195	1	.138
N of Valid Cases	203		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.85.

Null hypothesis 1b. Hypothesis 1b states that the respondent's rating of how effective the prescription allergy drug ad is independent of the type of endorser in the ad. Table 5 and Table 6 summarize the results. Since the p-value is .171, which is greater than the significance level of .05, the null hypothesis was not rejected. There was insufficient evidence to conclude that one's rating of how effective the prescription allergy drug ad was dependent on the type of endorser in the ad.

Table 5. Crosstabulation for H1b

		How Effective is the Ad?				
			Negative	Effective Neutral	Positive	Total
Type of Endorser	Expert endorser	Count	9	18	25	52
		% within type of endorser	17.3%	34.6%	48.1%	100.0%
	Typical endorser	Count	9	24	18	51
		% within type of endorser	17.6%	47.1%	35.3%	100.0%
	Celebrity endorser	Count	13	16	21	50
		% within type of endorser	26.0%	32.0%	42.0%	100.0%
	No endorser	Count	17	12	22	51
		% within type of endorser	33.3%	23.5%	43.1%	100.0%
Total		Count	48	70	86	204
		% within type of endorser	23.5%	34.3%	42.2%	100.0%

Table 6. Chi Square Test for H1b

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.055 ^a	6	.171
Likelihood Ratio	8.948	6	.177
Linear-by-Linear Association	1.721	1	.190
N of Valid Cases	204		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.76.

Null hypothesis 1c. Hypothesis 1c states that the respondent's rating of how informative the prescription allergy drug ad is independent of the type of endorser in the ad. Table 7 and Table 8 summarize the results. Since the p-value is .988, which is greater

than the significance level of .05, the null hypothesis was not rejected. There was insufficient evidence to conclude that one's rating of how informative the prescription allergy drug ad was dependent on the type of endorser in the ad.

Table 7. Crosstabulation for H1c

		How Informative is the Ad?				Total
		Negative	Neutral	Positive		
Type of Endorser	Expert endorser	Count	7	11	34	52
		% within type of endorser	13.5%	21.2%	65.4%	100.0%
	Typical endorser	Count	9	9	33	51
		% within type of endorser	17.6%	17.6%	64.7%	100.0%
	Celebrity endorser	Count	7	10	33	50
		% within type of endorser	14.0%	20.0%	66.0%	100.0%
	No endorser	Count	8	8	35	51
		% within type of endorser	15.7%	15.7%	68.6%	100.0%
Total		Count	31	38	135	204
		% within type of endorser	15.2%	18.6%	66.2%	100.0%

Table 8. Chi Square Test for H1c

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.920 ^a	6	.988
Likelihood Ratio	.920	6	.988
Linear-by-Linear Association	.029	1	.866
N of Valid Cases	204		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.60.

Null hypothesis 1d. Hypothesis 1d states that the respondent's rating of how believable the prescription allergy drug ad is independent of the type of endorser in the ad. Table 9 and Table 10 summarize the results. Since the p-value is .523, which is greater than the significance level of .05, the null hypothesis was not rejected. There was insufficient evidence to conclude that one's rating of how believable the prescription allergy drug ad was dependent on the type of endorser in the ad.

Table 9. Crosstabulation for H1d

		How Believable is the Ad?				Total
		Negative	Neutral	Positive		
Type of endorser	Expert endorser	Count	6	23	23	52
		% within type of endorser	11.5%	44.2%	44.2%	100.0%
	Typical endorser	Count	7	15	29	51
		% within type of endorser	13.7%	29.4%	56.9%	100.0%
	Celebrity endorser	Count	5	24	21	50
		% within type of endorser	10.0%	48.0%	42.0%	100.0%
	No endorser	Count	4	19	28	51
		% within type of endorser	7.8%	37.3%	54.9%	100.0%
Total		Count	22	81	101	204
		% within type of endorser	10.8%	39.7%	49.5%	100.0%

Table 10. Chi Square Test for H1d

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.166 ^a	6	.523
Likelihood Ratio	5.255	6	.512
Linear-by-Linear Association	.585	1	.444
N of Valid Cases	204		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 5.39.

Null hypothesis 1e. Hypothesis 1e states that the respondent's rating of how clear the prescription allergy drug ad is independent of the type of endorser in the ad. Table 11 and Table 12 summarize the results. Since the p-value is .141, which is greater than the significance level of .05, the null hypothesis was not rejected. There was insufficient evidence to conclude that one's rating of how clear the prescription allergy drug ad was dependent on the type of endorser in the ad.

Table 11. Crosstabulation for H1e

		How Clear is the Ad?			Total	
		Negative	Neutral	Positive		
Type of endorser	Expert endorser	Count	8	11	33	52
		% within type of endorser	15.4%	21.2%	63.5%	100.0%
	Typical endorser	Count	4	11	36	51
		% within type of endorser	7.8%	21.6%	70.6%	100.0%
	Celebrity endorser	Count	7	13	30	50
		% within type of endorser	14.0%	26.0%	60.0%	100.0%
	No endorser	Count	12	4	35	51
		% within type of endorser	23.5%	7.8%	68.6%	100.0%
Total		Count	31	39	134	204
		% within type of endorser	15.2%	19.1%	65.7%	100.0%

Table 12. Chi Square Test for H1e

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.635 ^a	6	.141
Likelihood Ratio	10.540	6	.104
Linear-by-Linear Association	.294	1	.587
N of Valid Cases	204		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.60.

Research Question 2

Is there a relationship between the type of endorsement used in a prescription drug ad and ones attitude toward the advertised drug?

Null hypothesis 2. Hypothesis 2 states that a respondent’s attitude toward the advertised drug is independent of the type of endorser in the ad. Table 13 and Table 14 summarize the results. Since the p-value is .201, which is greater than the significance level of .05, the null hypothesis was not rejected. There was insufficient evidence to conclude that a respondent’s attitude toward the advertised drug was dependent on the type of endorser in the ad.

Table 13. Crosstabulation for H2

		What is Your Overall Attitude Toward Seigrella?				
			Overall Attitude Toward Seigrella			Total
			Negative	Neutral	Positive	
Type of endorser	Expert endorser	Count	4	26	21	51
		% within type of endorser	7.8%	51.0%	41.2%	100.0%
	Typical endorser	Count	10	25	16	51
		% within type of endorser	19.6%	49.0%	31.4%	100.0%
	Celebrity endorser	Count	12	21	17	50
		% within type of endorser	24.0%	42.0%	34.0%	100.0%
	No endorser	Count	15	19	17	51
		% within type of endorser	29.4%	37.3%	33.3%	100.0%
Total		Count	41	91	71	203
		% within type of endorser	20.2%	44.8%	35.0%	100.0%

Table 14. Chi Square Test for H2

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.540 ^a	6	.201
Likelihood Ratio	9.427	6	.151
Linear-by-Linear Association	3.875	1	.049
N of Valid Cases	203		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.10.

Research Question 3

Is there a relationship between the type of endorsement used in a prescription drug ad and ones likelihood of asking their physician for more information about the drug in the ad?

Null hypothesis 3. Hypothesis 3 states that a respondent's likelihood of asking physicians for more information about the advertised drug is independent of the type of endorser in the ad. Table 15 and Table 16 summarize the results. Since the p-value is .528, which is greater than the significance level of .05, the null hypothesis was not rejected. There was insufficient evidence to conclude that a respondent's likelihood of asking physicians for more information about the advertised drug was dependent on the type of endorser in the ad.

Table 15. Crosstabulation for H3

		How Likely are you to Ask Your Doctor for More Information?				
			Likely to ask doc for more info			Total
			Negative	Neutral	Positive	
Type of endorser	Expert endorser	Count	18	11	23	52
		% within type of endorser	34.6%	21.2%	44.2%	100.0%
	Typical endorser	Count	25	9	17	51
		% within type of endorser	49.0%	17.6%	33.3%	100.0%
Celebrity endorser	Count	22	9	19	50	
	% within type of endorser	44.0%	18.0%	38.0%	100.0%	
No endorser	Count	27	5	19	51	
	% within type of endorser	52.9%	9.8%	37.3%	100.0%	
Total	Count	92	34	78	204	
	% within type of endorser	45.1%	16.7%	38.2%	100.0%	

Table 16. Chi Square Test for H3

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.125 ^a	6	.528
Likelihood Ratio	5.386	6	.495
Linear-by-Linear Association	1.372	1	.241
N of Valid Cases	204		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 8.33.

Research Question 4

Is there a relationship between the type of endorsement used in the prescription drug ad and ones likelihood of asking their physician to prescribe the drug in ad?

Null hypothesis 4. Hypothesis 4 states that a respondent’s likelihood of asking physicians to prescribe the advertised drug is independent of the type of endorser in the ad. Table 17 and Table 18 summarize the results. Since the p-value is .715, which is greater than the significance level of .05, the null hypothesis was not rejected. There was insufficient evidence to conclude that a respondent’s likelihood of asking physicians to prescribe the advertised drug was dependent on the type of endorser in the ad.

Table 17. Crosstabulation for H4

		How Likely Are You to Ask Your Doctor For a Prescription?			Total	
		Negative	Neutral	Positive		
Type of endorser	Expert endorser	Count	22	20	10	52
		% within type of endorser	42.3%	38.5%	19.2%	100.0%
	Typical endorser	Count	27	14	10	51
		% within type of endorser	52.9%	27.5%	19.6%	100.0%
	Celebrity endorser	Count	28	13	9	50
		% within type of endorser	56.0%	26.0%	18.0%	100.0%
	No endorser	Count	29	12	10	51
		% within type of endorser	56.9%	23.5%	19.6%	100.0%
Total		Count	106	59	39	204
		% within type of endorser	52.0%	28.9%	19.1%	100.0%

Table 18. Chi Square Test for H4

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.715 ^a	6	.715
Likelihood Ratio	3.655	6	.723
Linear-by-Linear Association	.949	1	.330
N of Valid Cases	204		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 9.56.

CHAPTER 5: DISCUSSION, IMPLICATIONS, RECOMMENDATIONS

The purpose of this study was to identify whether there were differences in responses toward a prescription drug ad based on endorser type. While there have been many studies that have evaluated the effectiveness of different types of endorsers on different types of products, none of them have specifically evaluated if such a difference existed when using an ad that promoted a prescription drug.

This final chapter of the dissertation provides an overview of the study and its findings. The first few sections provide a brief overview of the research problem, the research questions and hypotheses, and the methodology used. The last two sections provide a summary of the results and an in depth discussion of the findings, which includes an interpretation of the findings, relationship of the current study with previous research, practical implications, and recommendations for future research.

Statement of the Problem

In 2006, Pfizer hired Robert Jarvik to endorse its new lowering cholesterol drug, Lipitor (“Dr. Jarvik,” 2008). In the ads, Pfizer positioned Jarvik as an expert by introducing him as a physician and the inventor of the Jarvik artificial heart. Pfizer paid Jarvik \$1.35 million for a 2-year-contract and spent \$2.58 million on the Lipitor ad campaign that featured him. The campaign was a success; in fact, some have claimed that the campaign helped make Lipitor the number one selling prescription drug in the world (Hirsh, 2008).

Pfizer's use of Jarvik as an endorser came under scrutiny with accusations of deception. Jarvik was not a practicing physician, but the ads depicted him as one ("Dr. Jarvik," 2008). The House Committee on Energy and Commerce's Subcommittee on Oversight and Investigations investigated Pfizer's misleading claims. Subsequently, Pfizer discontinued airing the ads ("Dr. Jarvik," 2008).

Even though Pfizer stopped using Jarvik as its endorser, it had already profited from his expertise. In 2000, *Consumer Reports* conducted a study to evaluate Jarvik's effectiveness. The study found that out of the 978 participants who viewed the ad, 48% had favorable impressions toward Lipitor, and close to 67% kept taking Lipitor all because of Jarvik's endorsement ("Cholesterol Drugs," 2008). Could it be that there is a relationship between using Jarvik as an endorser and patients' favorable attitudes and behaviors toward Lipitor? Would this relationship be the same if the ads did not use an expert endorser, but instead used a celebrity endorser, or a typical consumer, or no endorser?

It is important to find answers to these types of questions. If there is a difference in patients' behaviors and attitudes toward a DTCA of a prescription drug based on the endorser type, and if physician endorsers elicit more favorable reactions from patients than the other type of endorsers, then a problem arises if physician endorsers are presented in a deceptive manner because they can ultimately hurt the patient and increase unnecessary medical costs.

Research Questions and Hypotheses

Research Question 1

Is there a relationship between the type of endorsement used in a prescription drug ad and one's attitudes toward the ads?

Null hypothesis 1a. A respondent's rating of how interesting the prescription allergy drug ad is independent of the type of endorser in the ad.

Null hypothesis 1b. A respondent's rating of how effective the prescription allergy drug ad is independent of the type of endorser in the ad.

Null hypothesis 1c. A respondent's rating of how informative the prescription allergy drug ad is independent of the type of endorser in the ad.

Null hypothesis 1d. A respondent's rating of how believable the prescription allergy drug ad is independent of the type of endorser in the ad.

Null hypothesis 1e. A respondent's rating of how clear the prescription allergy drug ad is independent of the type of endorser in the ad.

Research Question 2

Is there a relationship between the type of endorsement used in a prescription drug ad and one's attitude toward the advertised drug?

Null hypothesis 2. A respondent's attitude toward the advertised drug is independent of the type of endorser in the ad.

Research Question 3

Is there a relationship between the type of endorsement used in a prescription drug ad and one's likelihood of asking their physician about the drug in the ad?

Null hypothesis 3. A respondent's likelihood of asking physicians for more information about the advertised drug is independent of the type of endorser in the ad.

Research Question 4

Is there a relationship between the type of endorsement used in the prescription drug ad and ones likelihood of asking their physician to prescribe the drug in ad?

Null hypothesis 4. A respondent's likelihood of asking physicians to prescribe the advertised drug is independent of the type of endorser in the ad.

Review of the Methodology

As stated in Chapter 1, the purpose of this dissertation was to identify whether there were differences in responses toward a prescription drug ad based on endorser type (expert endorser, typical consumer endorser, celebrity endorser). The researcher used a correlational research methodology.

The study was conducted in an allergy clinic that was located in the southern part of the United States. The time frame for collecting data was almost three weeks. About 204 respondents completed the survey, which was more than the original proposed sample size of 128. The study targeted two types of allergy patients. Those that came in for their allergy check-up appointments and those that came in for their weekly or biweekly allergy shots. Children were not included in this study. Each of the patients was randomly assigned to either one of the three different treatment groups (the expert, celebrity, and typical consumer) or to the one control group (no endorser). No patients were allowed to take the survey more than once. To randomly assign patients, the ads

were stacked in alternating order with every fourth ad repeated. Patients that walked into the clinic received the ad at the top of the stack, thus resulting in a random distribution.

The researcher worked with a professional designer to develop four fictitious prescription allergy ads. All of the four ads were almost the same, except for the type of endorser. One ad had a physician endorser, one ad had a typical consumer endorser, and one ad had a celebrity endorser (Tom Selleck). For the control group, the ad had no endorser. All four ads were colored, and they resembled real prescription drug ads. As for the ads' layout, it was similar to the Lipitor ad that featured Dr. Robert Jarvik and to the Xyzal ad that appeared in the 2008 May issue of *Cooking Light*. For content, the researcher used the same content as the one in the Xyzal ad. Finally, the name of the allergy medication in the ad was fictitious.

After viewing one of the ads, the respondents took a quick survey that measured their attitudes toward the ad, their attitudes toward the allergy medication in the ad, their likelihood of asking the physician for more information about the drug, and their likelihood of asking the physician to prescribe the drug in the ads. The survey used in this study was a modified version of Dr. Hershey Friedman's survey. In 1977, Dr. Friedman developed the survey to evaluate the product-endorser type interactions. Dr. Friedman gave the researcher written permission to use the modified version.

The researcher used an approved script when approaching patients. The office staff played a role in initially introducing each patient to the researcher and her study. The allergy shot patients were required to wait 20 minutes after taking their shots. During that time, the researcher approached them and asked them if they would like to take part in the study. For patients that came in for an allergy checkup appointment, they took the

survey before their appointments because they had plenty of time to do so. See Appendix C for a copy of the script.

The specific purpose of the study was not disclosed to the patients at the forefront of the study. After taking the survey, the patients were debriefed by a written letter. The letter included the researcher's e-mail address, in case the respondents had any questions. See Appendix D for a copy of the debriefing letter.

Summary of the Results

Null hypotheses 1a through 1e evaluated the respondents' attitudes toward the ad based on endorser type. After conducting Chi-Square Test of Independence, null hypotheses 1a through 1e were not rejected since their p-values were greater than the significance level of .05. Null hypothesis 1a had a p-value of .499, null hypothesis 1b had a p-value of .171, null hypothesis 1c had a p-value of .988, null hypothesis 1d had a p-value of .523, and null hypothesis 1e had a p-value of .141.

Null hypothesis 2 measured the respondents' attitudes toward the allergy prescription medication. After conducting Chi-Square Test of Independence, the null hypothesis was also not rejected because the p-value of .201 was greater than the significance level of .05. Null hypothesis 3 measured the respondents' likelihood of asking their physicians for more information about the advertised drug. After conducting the Chi-Square Test of Independence, the null hypothesis was also not rejected since the p-value of .528 was greater than the significance level of .05. Finally, null hypothesis 4 measured the respondents' likelihood of asking their physicians to prescribe the allergy prescription medication in the ad. Upon conducting the Chi-Square Test of Independence,

the null hypothesis was also not rejected because its p-value of .715 was greater than the significance level of .05.

Discussion

Relationship of the Current Study to Previous Research

Throughout the study, the researcher used the theory of endorser effectiveness to answer the research questions and evaluate the null hypotheses. Dr. Hershey Friedman developed this theory in 1977. He found significant differences in responses toward specific products based on endorser type (Friedman, 1977). He specifically found that the most effective endorser to use for products that carry a high physical, performance, and/or financial risks is an expert endorser. The most effective endorser to use for products that carry high social, psychological or both risks is a celebrity endorser, and the best endorser to use for products that are low in all risks is a typical consumer (Friedman, 1977).

Since prescription allergy medication is a health related product, the researcher followed Jacoby and Kaplan's (1972) findings and hypothesized that this type of product carried a high physical, performance, or financial risk. By following Friedman's theory, which was influenced by Kelman's (1961) social influence theory, the researcher then hypothesized that the expert endorser would be the most effective endorser.

Friedman's theory of endorser effectiveness was supported by many other studies (e.g., Brock, 1965; Crisci & Kassinove, 1973; Fireworker & Friedman, 1977; Friedman et al., 1979; Harmon & Coney, 1982; Kerin & Barry, 1981; Rubin, et al., 1982; Settle, 1972; Woodside & Davenport, 1974). The only difference between some of these studies

and this study is the fact that researchers in the other studies observed the actual behavior of respondents based on the different types of endorsers. For example, Crisci and Kassinove (1973) evaluated the parents' behaviors after the parents were given advice by an individual with the title of Mr. or Dr. .The parents were not aware that they were taking part in the study, so their natural behavior was observed and measured. In this study, the respondents were told that they were taking part in the study by evaluating an ad and taking a survey.

As stated in Chapter 2, Lipscomb's (1985) thesis came closest to studying the influence of different types of endorsers on respondents' behaviors and attitudes toward drug ads. Unlike this study, however, Lipscomb used over the counter medications in her ads. She found that expert endorsers (physician and pharmacist) were the most successful in influencing consumers to purchase any OTC medications.

The present study, however, yielded different results than most of the studies that were highlighted in Chapter 2, and it did not confirm the theory of endorser effectiveness. In looking at the analysis and the previous section in this chapter, it is clear that none of the null hypotheses were rejected. There was insufficient evidence to conclude that the patients' overall attitude toward the ad, their overall attitude toward the prescription allergy medication, their likelihood of asking physicians for more information about the advertised drug, and their likelihood of asking physicians to prescribe the advertised drug were dependent on the endorser type.

Interpretation of the Findings

So what do these findings mean? This could mean great news to the pharmaceutical industry when developing print ad campaigns. The use of celebrities in

the pharmaceutical industry is on the rise (Neff, 2002). There is no dollar amount that reveals the total amount of money that pharmaceutical companies spend on celebrity or expert endorsers. There is, however, general statistics that show close to 25% of ads feature a celebrity (Erdogan, 1999), which cost companies millions of dollars (Lee & Thorson, 2008). The astronomical cost of celebrity and expert endorsers in DTCA was evident in Jarvik's endorsement of Lipitor. Pfizer paid Jarvik close to \$1.35 million for a 2-year-contract (Hirsh, 2008).

Since the study did not find any significant differences between the respondents' answers and the different endorser groups, pharmaceutical companies can save millions of dollars by hiring a typical consumer endorser, instead of a celebrity or an expert endorser for print advertisement campaigns. In fact, according to the findings in the study, pharmaceutical companies do not even have to use endorsers. The amount of money saved can go to research and development.

Another interpretation to the findings has to do with the type of respondents that made up the sample size. The study was conducted in an allergy clinic, where 86.8% of the respondents were allergy shot patients, and only 13.2% visited the clinic for their allergy check-up appointments. Thus, the majority of respondents suffered from severe allergies and took their allergy shots on a weekly or bi-weekly basis. They were aware of the different allergy drugs and were heavily involved in their own treatments. In addition, the allergy shot patients had time to closely analyze the ads, including the content. This is because they were required to wait in the waiting room for 20 minutes after taking their shots. These two characteristics, being highly involved in the product and having time to

evaluate the ad closely, could explain why no significant difference was found between the different endorser groups.

The explanation comes from the Elaboration Likelihood Model (ELM). In Chapter 2, the researcher briefly described ELM. Basically, ELM states that there are two routes to persuasion: the central route and the peripheral route (Petty & Cacioppo, 1983). In the central route, one evaluates an ad based on its content and the merit of the message. People use the central route when the topic is important to them, when they understand the content in the message, and when they have time to process the information. In the peripheral route, one evaluates an ad based on external cues. In some cases, the external cues are related to the endorsers' characteristics (e.g., credibility, attractiveness, likeability, etc.) (Petty et al., 1981). People use the peripheral route when the topic is not important to them, when they do not understand the content in the message, and when they do not have time to process the information (Petty & Cacioppo, 1983).

As described earlier, most of the patients in the study were highly involved in their allergy treatments. Many of them took weekly or bi-weekly allergy shots. Thus, allergy was an important topic to them. In fact, many of them were aware of the different types of prescription allergy medications that were available. Some of them wrote comments on the survey, explaining why they rated the ad poorly. The reasons had to do with its adverse reactions. Others voiced their opinion about the ads to the researcher after completing their surveys. Their comments also focused on the content in the ad. Because allergy was very important to them, and because they had time to evaluate the

ad, the findings supported ELM by showing that there was no significance difference between the four different groups based on endorser type.

Another explanation is the type of medium used. According to Chaiken and Eagly (1983), the characteristic of the source is an important persuasive factor when the ad is on television than when it is in print. In fact, Chaiken and Eagly found that the same likeable endorser is more persuasive in television ad as compared to in print ad. This is because, those viewing a print ad are able to read and analyze the content of the ad for as long as they want; and in the process, they take into consideration the merit of the message. They are less distracted than those who are viewing a 30-second television ad. When distraction is high, viewers process the message through the peripheral route and rely on simple cues to evaluate an ad (Petty & Cacioppo, 1983). These cues include endorser's credibility, endorser's attractiveness, endorser's likeability, etc. (Petty & Cacioppo, 1983). Since the medium in this study was a print ad, one explanation could be that the type of medium led respondents to evaluate the ad based on the merit of the message rather than on the different types of endorsers.

Another explanation for the findings is related to its timing. The study was administered during the same year that the Jarvik controversy erupted. Pfizer was accused of deceiving patients by using a non-practicing licensed physician to endorse Lipitor. Due to the accusations and investigations, Pfizer subsequently stopped using Jarvik as an endorser. So, could it be that this highly publicized controversy influenced consumers trust in endorsers, specifically expert endorsers?

Finally, the small sample size used in this study could have skewed the results. Even though the total sample size was 204, each of the group had about 51 respondents.

According to Norusis (2006), a small sample size could lead to accepting the null hypothesis when it is in fact false. “Remember, when the sample size is small, many outcomes are compatible with the null hypothesis being true” (p. 289).

Practical Implications

The purpose of this study was to identify whether there were differences in responses toward a prescription drug ad based on endorser type. No other studies have evaluated if such a difference existed in DTCA of prescription drugs. Even though the findings of the study cannot be generalized and were only related to a specific setting with a specific group of patients, future researchers can use this study as a building block and refine it to evaluate if, indeed, there are no differences in responses in DTCA based on endorser type.

Recommendations for Future Research

There are several recommendations for future research in this topic. First, researchers can do the same study but in a different setting. Respondents in this study were seeking medical attention for their allergies, so they took the survey in the allergy clinic. It would be interesting to compare these findings with the findings from respondents who suffer from allergies but who are not in an allergy clinic at the time they take the survey. Would the level of every day distractions lead to different findings, even though both types of populations have allergies? In other words, would extrinsic cues, such as the type of endorser influence the study’s findings when the respondents are not in a controlled environment?

Another study can use two types of respondents: Those that suffer from the kind of disease that the prescription drug in the ad treats and those that do not. This will truly

evaluate the theory of endorser effectiveness versus ELM. Would the findings reveal that those who suffer from the disease that the drug in the ad treats show no significant differences in their responses based on endorser type? Would the findings also reveal that those who do not suffer from the disease that the drug in the ad treats show significant differences in their responses based on endorser type? These findings would demonstrate the theory of endorser effectiveness and the ELM.

Future researchers can also use a different medium and run the same study in the same or different setting. Chaiken and Eagly (1983) noted that source characteristics are more persuasive when they appear in television ads than in print ads. Could it be that the theory of endorser effectiveness is supported in the television medium but not in the print medium?

Researchers can also feature different types of drugs in the print ads and compare and contrast the findings based on the different types of endorsers. Would a DTCA of a prescription allergy drug elicit the same responses as a DTCA of a prescription cancer medication? Could it be that the theory of endorser effectiveness is supported when the drug in the ad treats a life threatening disease?

Another suggestion for future researchers is to conduct the same study but include the same number of allergy shot patients and the same number of allergy check-up appointment patients. Many of the allergy check-up appointment patients are new patients, so one can evaluate if the theory of endorser effectiveness is supported with new patients who do not have a lot of knowledge about allergies as compared to allergy shot patients who know a lot about allergies. The researcher originally wanted to further analyze her findings by comparing and contrasting these two groups, but there were not

enough patients that came in for their regular allergy check-up appointments to conduct such an analysis.

REFERENCES

- Agarwal, S., & Teas, R. K. (2001). Perceived value: Mediating role of perceived risk [Electronic version]. *Journal of Marketing Theory & Practice*, 9(4), 1.
- Alsmadi, S. (2006). The power of celebrity endorsement in brand choice behavior: An empirical study of consumer attitudes [Electronic version]. *Journal of Accounting, Business & Management*, 13, 69-84.
- American Academy of Allergy Asthma & Immunology. (n.d.). *Allergy statistics*. Retrieved June 2, 2008, from www.aaaai.org/ar/default.htm
- American Medical Association. (2006a). *Number of female physicians by race/ethnicity*. (2006). Retrieved June 5, 2008, from <http://www.ama-assn.org/ama/pub/category/12928.html>
- American Medical Association. (2006b). *Number of male physicians by race/ethnicity*. Retrieved June 5, 2008, from <http://www.ama-assn.org/ama/pub/category/12929.html>
- Arnold, M. (2005). Pharma chiefs, FDA rap superficial DTC spots [Electronic version]. *Medical Marketing & Media*, 40(3), 32-32.
- Arnold, M. (2006). BONIVA pitchwoman: Sally Field [Electronic version]. *Medical Marketing & Media*, 41(9), 14-14.
- Aslam, M. M. (2006). Are you selling the right colour? A cross cultural review of colour as a marketing cue [Electronic version]. *Journal of Marketing Communications*, 12(1), 15-30.
- Asthma and Allergy Foundation of America. (2005). *Asthma overview*. Retrieved June 2, 2008, from <http://www.aafa.org/display.cfm?id=8>
- Asthma and Allergy Foundation of America. (2007). *2007 fall allergy capitals*. Retrieved June 2, 2008, from <http://www.aafa.org/display.cfm?id=9&sub=103&cont=494>
- Atkin, C., & Block, M. (1983). Effectiveness of celebrity endorsers [Electronic version]. *Journal of Advertising Research*, 23(1), 57-61.
- Baker, M. J., & Churchill, G. A. (1977). The impact of physically attractive models on advertising evaluations [Electronic version]. *Journal of Marketing Research (JMR)*, 14(4), 538-555.

- Basil, M. D. (1996). Identification as a mediator of celebrity effects [Electronic version]. *Journal of Broadcasting & Electronic Media*, 40, 478-495.
- Bauer, R. (1960). *Consumer behavior as risk taking*. In R. S. Hancock, (Eds.), *Dynamix marketing for a changing world* (pp. 389-398). Chicago: American Marketing Association.
- Bearden, W. O., & Shimp, T. A. (1982). The use of extrinsic cues to facilitate product adoption [Electronic version]. *Journal of Marketing Research (JMR)*, 19(2), 229-239.
- Berndt, E. R., Bui, L., Reiley, D. R., & Urban, G. L. (1995). Information, marketing, and pricing in the U.S. antiulcer drug market [Electronic version]. *American Economic Review*, 85(2), 100.
- Biswas, D., Biswas, A., & Das, N. (2006). The differential effects of celebrity and expert endorsements on consumer risk perceptions [Electronic version]. *Journal of Advertising*, 35(2), 17-31.
- Bitner, M. J., & Obermiller, C. (1985). The elaboration likelihood model: Limitations and extensions in marketing [Electronic version]. *Advances in Consumer Research*, 12(1), 420-425.
- Black, T. R. (1999). *Doing quantitative research in the social sciences: An integrated approach to research design, measurement and statistics*. Thousand Oaks, CA: Sage.
- Bradford, D. W., & Kleit, A. N. (2006). Evaluating the welfare effects of drug advertising [Electronic version]. *Regulation*, 29(1), 58-62.
- Brock, T. C. (1965). Communicator-recipient similarity and decision change [Electronic version]. *Journal of Personality and Social Psychology*, 1(6), 650-654.
- Broughton, D., Lee, J., & Nethery, R. (1999). The answer: \$213 billion [Electronic version]. *Street & Smith's Sports Business Journal*, 2(35), 23-29.
- Caballero, M. J., Lumpkin, J. R., & Madden, C. S. (1989). Using physical attractiveness as an advertising tool: An empirical test of the attraction phenomenon [Electronic version]. *Journal of Advertising Research*, 29(4), 16-22.
- Caballero, M. J., & Solomon, P. J. (1984). Effects of model attractiveness on sales response [Electronic version]. *Journal of Advertising*, 13(1), 17-33.
- Cacioppo, J. T., & Petty, R. E. (1984). The elaboration likelihood model of persuasion [Electronic version]. *Advances in Consumer Research*, 11(1), 673-675.

- Calfee, J. E. (2002). Public policy issues in direct-to-consumer advertising of prescription drugs [Electronic version]. *Journal of Public Policy & Marketing*, 21(2), 174-193.
- Chaiken, S., & Eagly, A. H. (1983). Communication modality as a determinant of persuasion: The role of communicator salience [Electronic version]. *Journal of Personality and Social Psychology*, 45, 241-256.
- Chaiken, S., & Maheswaran, D. (1994). Heuristic processing can bias systematic processing: Effects of source credibility, argument ambiguity, and task importance on attitude judgment [Electronic version]. *Journal of Personality and Social Psychology*, 3, 460-473.
- Choi, S., & Lee, W. (2007). Understanding the impact of direct-to-consumer (DTC) pharmaceutical advertising on patient-physician interactions [Electronic version]. *Journal of Advertising*, 36(3), 137-149.
- Cholesterol drugs Lipitor battles generics. (2008, March). *Consumer Reports*, 73(8), 48-49.
- Cline, R. J. W., & Young, H. N. (2004). Marketing drugs, marketing health care relationships: A content analysis of visual cues in direct-to-consumer prescription drug advertising [Electronic version]. *Health Communication*, 16(2), 131-157.
- Cole, C., Ettenson, R., Reinke, S., & Schrader, T. (1990). The elaboration likelihood model (ELM): Replications, extensions and some conflicting findings [Electronic version]. *Advances in Consumer Research*, 17, 231-236.
- Coleman, J. S., Katz, E., & Menzel, H. (1957). The diffusion of an innovation among physicians [Electronic version]. *Sociometry*, 20(4), 253-270.
- Cooking Light media kit*. (2007). Retrieved June 5, 2008, from <http://www.cookinglight.com/cooking/perks/advertise/circulation.html>
- Cooper, D. R., & Schindler, P. S. (2006). *Business research methods* (9th ed.). New York: McGraw-Hill Irwin.
- Crisci, R., & Kassinove, H. (1973). Effect of perceived expertise, strength of advice, and environmental setting on parental compliance [Electronic version]. *The Journal of Social Psychology*, 89(1), 245-250.
- Diehl, S., Mueller, B., & Terlutter, R. (2008). Consumer responses towards non-prescription and prescription drug advertising in the US and Germany [Electronic version]. *International Journal of Advertising*, 27(1), 99-131.

- Donohue, J. (2006). A history of drug advertising: The evolving roles of consumers and consumer protection [Electronic version]. *The Milbank Quarterly*, 84(4), 659-699.
- Dowling, G. R. (1986). Perceived risk: The concept and its measurement [Electronic version]. *Psychology & Marketing*, 3(3), 193-210.
- Dr. Jarvik doesn't row. (2008). *Multinational Monitor*, 29(1), 60.
- Erdogan, B. Z. (1999). Celebrity endorsement: A literature review [Electronic version]. *Journal of Marketing Management*, 15(4), 291-314.
- FDA approves XYZAL(R) (Levocetirizine Dihydrochloride) tablets for the relief of seasonal and year round allergies, and chronic hives.* (2007, May 30). Retrieved June 4, 2008, from <http://www.medicalnewstoday.com/articles/72547.php>
- Ferris, C. (2004). *The effects of advertising schema-congruity on emotional response*. Unpublished master's thesis, University of Florida, Gainesville.
- Fillon, M. (2006). *Supplements under siege: Inside the conspiracy to take away your vitamins, minerals, and herbs*. Orem, UT: Woodland Publishing.
- Fireworker, R. B., & Friedman, H. (1977). Applications and implementation [Electronic version]. *Decision Sciences*, 8(1), 576-583.
- Forkan, J. P. (1980). Product match-up key to effective star presenters [Electronic version]. *Advertising Age*, 51, 42.
- Fowler, F. J. (2002). *Survey research methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Fraser, B. P., & Brown, W. J. (2002). Media, celebrities, and social influence: Identification with Elvis Presley [Electronic version]. *Mass Communication & Society*, 5(2), 183-206.
- Freiden, J. B. (1982). An evaluation of spokesperson and vehicle source effects in advertising [Electronic version]. *Current Issues and Research in Advertising*, 77-87.
- Freiden, J. B. (1984). Advertising spokesperson effects: An examination of endorser type and gender on two audiences [Electronic version]. *Journal of Advertising Research*, 24(5), 33-41.
- Friedman, H. (1977). Endorser effectiveness as a function of product type. *Dissertation Abstracts International*. (UMI No. 7723183).

- Friedman, M., & Gould, J. (2007). Physicians' attitudes toward direct-to-consumer prescription drug marketing [Electronic version]. *Journal of Medical Marketing*, 7(1), 33-44.
- Friedman, H., Termini, S., & Washington, R. (1979). The effectiveness of advertisements utilizing four types of endorsers [Electronic version]. *Journal of Advertising*, 5(3), 22-24.
- FTC guides concerning use of endorsements*. (1980). Retrieved July 24, 2008, from <http://www.ftc.gov/bcp/guides/endorse.htm>
- Gellad, Z.F., & Lyles, K.W. (2007). Direct-to-consumer advertising of pharmaceuticals [Electronic version]. *The American Journal of Medicine*, 120(1), 475-480.
- General Accounting Office. (2002). *Prescription Drugs: FDA Oversight of Direct-To-Consumer Advertising Has Limitations*. Retrieved July 20, 2008, from <http://www.gao.gov/new.items/d03177.pdf>
- Glatthorn, A.A., & Joyner, R.L. (2005). *Writing the winning thesis or dissertation* (2nd ed.). Thousand Oaks, CA: Corwin Press.
- Gonul, F. F., Carter, F., & Wind, J. (2000). What kind of patients and physicians value direct-to-consumer advertising of prescription drugs [Electronic version]? *Health Care Management Science*, 3, 215-226.
- Harmon, R. R., & Coney, K. A. (1982). The persuasive effects of source credibility in buy and lease situations [Electronic version]. *Journal of Marketing Research (JMR)*, 19(2), 255-260.
- Healing power of blue light. (1908, September 13). *The New York Times*, C7.
- Henry J. Kaiser Family Foundation (2002, March). *National survey of physicians part II: Doctors and prescription drugs*. Retrieved February 28, 2008, from <http://www.kff.org/rxdrugs/20020415b-index.cfm>
- Henry J. Kaiser Family Foundation. (2008, March). *The public on prescription drugs and pharmaceutical companies*. Retrieved June 10, 2008, from <http://www.kff.org/kaiserpolls/upload/7748.pdf>
- Hirsh, J. (2008). *The controversial ad proves highly effective*. http://blogs.consumerreports.org/health/prescription_drugs/
- Hollon, M. (1999). Direct to consumer marketing of prescription drugs: Creating consumer demand [Electronic version]. *Journal of the American Medical Association*, 281(4), 382-384.

- Hone, F., & Benson, R. (2004). DTC: European style [Electronic version]. *Pharmaceutical Executive*, 24(3), 96-106.
- Horton, D., & Wohl, R. (1956). Mass communication and para-social interaction: Observations on intimacy at a distance [Electronic version]. *Psychiatry*, 19, 215-229.
- House Committee on Energy and Commerce. (2008). *Direct-to-consumer advertising: Marketing, education, or deception?* Retrieved July 30, 2008, from http://energycommerce.house.gov/cmte_mtgs/110-oi-hrg.050808.DTC.shtml
- Hsu, C. K., & McDonald, D. (2002). An examination on multiple celebrity endorsers in advertising [Electronic version]. *Journal of Product & Brand Management*, 11(1), 19-29.
- Jacobs, L., Keown, C., Worthley, R., & Kyung-II, G. (1991). Cross-cultural colour comparisons: Global marketers beware [Electronic version]! *International Marketing Review*, 8(3), 21.
- Jacoby, J., & Kaplan, L. B. (1972). The components of perceived risk, *Proceedings of the Third Annual Conference of the Association for Consumer Research*.
- Johnsen, M. (2004). Convenience is a key driver for these old-school shoppers [Electronic version]. *Drug Store News*, 26(8), 157-162.
- Kahle, L. R., & Homer, P. M. (1985). Physical attractiveness of the celebrity endorser: A social adaptation perspective [Electronic version]. *Journal of Consumer Research*, 11, 954-961.
- Kahle, L. R., & Riley, C. (2004). *Sports marketing and the psychology of marketing communication*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Kaikati, J. G. (1987). Celebrity advertising: A review and synthesis [Electronic version]. *International Journal of Advertising*, 6, 93-105.
- Kamins, M. A. (1990). An investigation into the match-up hypothesis in celebrity advertising: When beauty may be only skin deep [Electronic version]. *Journal of Advertising*, 19(1), 4-13.
- Kamins, M. A., & Gupta, K. (1994). Congruence between spokesperson and product type: A matchup hypothesis perspective [Electronic version]. *Psychology & Marketing*, 11(6), 569-586.

- Kanungo, R. N., & Pang, S. (1973). Effects of human models on perceived product quality [Electronic version]. *Journal of Applied Psychology*, 57(2), 172-178.
- Kaplan, L.B., Szybillo, G.J., & Jacoby, J. (1974). Components of perceived risk in product purchase: A cross validation [Electronic version]. *Journal of Applied Psychology*, 59(3), 287-291.
- Kaufman, D. Q., Stasson, M. F., & Hart, J. W. (1999). Are the tabloids always wrong or is that just what we think? Need for cognition and perceptions of articles in print media [Electronic version]? *Journal of Applied Psychology*, 29(9), 1984-1997.
- Kelman, H. C. (1961). Process of opinion change [Electronic version]. *Public Opinion Quarterly*, 25(1), 57-78.
- Kerin, R. A., & Barry, T. E. (1981). The CEO spokesperson in consumer advertising: An experimental investigation [Electronic version]. *Current Issues and Research in Advertising*, 4(1), 135-147.
- Lainer, B. (1982). Drug company advertising to the public [Electronic version]. *Journal of the American Medical Association*, 248(10), 1163.
- Lakin, M. (2008). Study casts doubt on value of DTC ads. *Advertising Age*. Retrieved September 6, 2008, from http://adage.com/article?article_id=130732s
- Lavidge, R. J., & Steiner, G. A. (1961). A model for predictive measurements of advertising effectiveness [Electronic version]. *Journal of Marketing*, 25(6), 59-62.
- Law, M.R., Majumdar, S.R., & Soumerai, S.B. (2008). Effects of illicit direct to consumer advertising on use of etanercept, mometasone, and tegaserod in Canada: Controlled longitudinal study. *British Medical Journal*, 337(a1055). Retrieved September 6, 2008, from http://www.bmj.com/cgi/reprint/337/sep02_1/a1055
- Lee, J.G., & Thorson, E. (2008). The impact of celebrity product incongruence on the effectiveness of product endorsement [Electronic version]. *Journal of Advertising Research*, 48 (3), 433-449.
- Lipscomb, C. (1985). *A comparative study of expert and celebrity endorsement of OTC pharmaceutical products*. Unpublished master's thesis, Auburn University, Mississippi.
- Litwin, M. S. (1995). *How to measure survey reliability and validity*. Thousand Oaks, CA: Sage.
- Lynch, J., & Schuler, D. (1994). The matchup effect of spokesperson and product congruency [Electronic version]. *Psychology & Marketing*, 11(5), 417-445.

- Malhorta, N. K. (2004). *Marketing research: An applied orientation* (4th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Martin, J. H. (1996). Is the athlete's sport important when picking an athlete to endorse a nonsport product [Electronic version]? *Journal of Consumer Marketing*, 13(6), 28-43.
- Matricardi, P. M., Rosmini, F., Panetta, V., Ferrigno, L., & Bonini, S. (2002). Hay fever and asthma in relation to markers of infection in the United States [Electronic version]. *Journal of Allergy and Clinical Immunology*, 110(3), 381-387.
- Mehta, S. C., Lalwani, A. K., & Ping, L. (2001). Reference group influence and perceived risk in services among working women in Singapore: A replication and extension [Electronic version]. *Journal of International Consumer Marketing*, 14(1), 43.
- Menon, A. M., Deshpande, A. D., Zinkhan, G. M., & Perri, M. I. (2004). A model assessing the effectiveness of direct-to-consumer advertising: Integration of concepts and measures from marketing and healthcare [Electronic version]. *International Journal of Advertising*, 23(1), 91-118.
- Miciak, A., R., & Shanklin, W., L. (1994). Choosing celebrity endorsers [Electronic version]. *Marketing Management*, 3(3), 51-59.
- Miniard, P. W., Dickson, P. R., & Lord, K. R. (1988). Some central and peripheral thoughts on the route to persuasion [Electronic version]. *Advances in Consumer Research*, 15(1), 204-208.
- Murray, E., Lo, B., Pollack, L., Donelan, K., & Lee, K. (2003). Direct-to-consumer advertising: Physicians' views of its effects on quality of care and the doctor-patient relationship [Electronic version]. *The Journal of the American Board of Family Practice*, 16, 513-524.
- National Institute for Health Care Management. (2002, May). *Prescription drug expenditures in 2001: Another year of escalating costs*. Retrieved July 29, 2008, from <http://www.nihcm.org/~nihcmor/pdf/spending2001.pdf>
- Neff, J. (2002, May 24). Drugmakers up use of celebs in ads, risking an overdose or critics' ire [Electronic version]. *Advertising Age*, 73 (21), S-4.
- Norusis, M.J. (2006). *SPSS 14.0 guide to data analysis*. Upper Saddle River, NJ: Prentice Hall.

- Ohanian, R. (1990). Construction and validation of a scale to measure celebrity endorsers' perceived expertise, trustworthiness, and attractiveness [Electronic version]. *Journal of Advertising* 19(3), 39-52.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1994). Alternative scales for measuring service quality: A comparative assessment based on Psychometric and diagnostic criteria [Electronic version]. *Journal of Retailing*, 70(3), 201-230.
- Peebles, M. E. (2003). And now, a word from our sponsor. *Harvard Business Review*, 10, 31-42.
- Pepep, D. T. (2004). Celebrity checklist [Electronic version]. *Pharmaceutical Executive*, 24(7), 94-96.
- Petty, R. E., & Cacioppo, J. T. (1983). Source factors and the elaboration likelihood model of persuasion [Electronic version]. *Advances in Consumer Research*, 11(1), 668-672.
- Petty, R. E., Cacioppo, J. T., & Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion [Electronic version]. *Journal of Personality and Social Psychology*, 41(5), 847-855.
- Peyrot, M., Alperstein, N. M., Van Doren, D., & Poli, L. G. (1998). Direct-to-consumer ads can influence behavior [Electronic version]. *Marketing Health Services*, 18(2), 27-32.
- Pines, W. L. (1999). A history and perspective on direct-to-consumer promotion [Electronic version]. *Food and Drug Law Journal*, 54(4), 489-518.
- Robinson, A. R., Hohmann, K. B., Rifkin, J. I., Topp, D., Gilroy, C. M., Pickard, J. A., et al. (2004). Direct-to-consumer pharmaceutical advertising [Electronic version]. *Archives of Internal Medicine*, 164, 427-432.
- Rodale launches women's health Australia.* (2007, June 4). Retrieved June 5, 2008, from <http://www.rodale.com/1,6597,7-106-1306,00.html>
- Roselius, R. (1971). Consumer rankings of risk reduction methods [Electronic version]. *Journal of Marketing*, 35(1), 56-61.
- Rosenthal, M., B., Berndt, E., R., Donohue, J., M., Frank, R., G., & Epstein, A., M. (2002). Promotion of prescription drugs to consumers [Electronic version]. *The New England Journal of Medicine*, 346(7), 498.

- Rubin, V., Mager, C., & Friedman, H. H. (1982). Company president versus spokesperson in television commercials [Electronic version]. *Journal of Advertising Research*, 22(4), 31-33.
- Rucker, D. D., & Petty, R. E. (2006). Increasing the effectiveness of communications to consumers: Recommendations based on elaboration likelihood and attitude certainty perspectives [Electronic version]. *Journal of Public Policy & Marketing*, 25(1), 39-52.
- Scott, W. R., & Davis, G. F. (2007). *Organizations and organizing: Rational, natural, and open system perspectives*. Upper Saddle River, NJ: Pearson Prentice Hall.
- Settle, R. B. (1972). Attribution theory and acceptance of information [Electronic version]. *Journal of Marketing Research*, 11, 85-88.
- Southern Living*. (2007). Retrieved June 23, 2008, from http://www.southernliving.com/southern/images/inside_sl_ss/article-images/onlinemediakit/2008/2008_CL_Ratev2.pdf
- Spiller, L. D., & Wymer, W. W. (2001). Physicians' perceptions and uses of commercial drug information sources: An examination of pharmaceutical marketing to physicians [Electronic version]. *Health Marketing Quarterly*, 19(1), 91-105.
- Sproull, N. L. (1995). *Handbook of research methods: A guide for practitioners and students in the social sciences* (2nd ed.). Metuchen, NJ: Scarecrow Press.
- Statement of the honorable Bart Stupak subcommittee on direct-to-consumer advertising: Marketing, education, and deception*. (2008). Retrieved September 5, 2008, from <http://energycommerce.house.gov/Subcommittees/OI-Stupak/050808.OI.hrg.DTC.pdf>
- Terblanche, N. C., & Boshoff, C. (2008). Improved scale development in marketing [Electronic Version]. *International Journal of Marketing*, 50(1), 105-119.
- Testimony of Gary Ruskin, executive director of commercial alert before the U.S. Food and Drug Administration hearing on direct-to-consumer prescription drug advertising*. (2005). Retrieved July 30, 2008, from <http://www.fda.gov/cder/ddmac/dtc2005/ruskin.pdf>
- Till, B. D., & Busler, M. (2000). The match-up hypothesis: Physical attractiveness, expertise, and the role of fit on brand attitude, purchase intent and brand beliefs [Electronic version]. *Journal of Advertising*, 29(3), 1-13.
- U.S. Census Bureau. (2006). *Families and living arrangements*. Retrieved August 11, 2008, from <http://www.census.gov/>

- U.S. Census Bureau. (n.d.). *Frequently occurring first names and surnames from the 1990 census –first male name file: 1990. [Data file]*. Retrieved June 7, 2008, from <http://www.census.gov/genealogy/names/dist.male.first>
- U.S. Census Bureau. (2000). *Frequently occurring surnames from census 2000*. Retrieved June 8, 2008, from <http://www.census.gov/genealogy/www/freqnames2k.html>
- U.S. Food and Drug Administration. (2004). *Patient and physician attitudes and behaviors associated with DTC promotion of prescription drugs*. Retrieved March 3, 2008, from <http://www.fda.gov/cder/ddmac/Final%20Report/FRfinal111904.pdf>
- Venkataraman, S., & Stremersch, S. (2007). The debate on influencing doctors' decisions: Are drug characteristics the missing link [Electronic version]? *Management Science*, 53(11), 1688-1701.
- Vogt, D. (2005). *Congressional research reports: Direct-to-consumer advertising of prescription drugs*. Retrieved July 1, 2008, from <http://www.law.umaryland.edu/marshall/crsreports/crsdocuments/RL3285303252005.pdf>
- Wang, A. (2005). The effects of expert and consumer endorsements on audience response [Electronic version]. *Journal of Advertising Research*, 45(4), 402-412.
- Wang, K. C., Hsieh, A. T., & Chen, W. Y. (2002). Is the tour leader an effective endorser for group package tour brochures [Electronic version]? *Tourism Management*, 23, 489-498.
- Weissman, J., S., Blumenthal, D., Silk, A. J., Newman, M., Zapert, K., Leitman, R., et al. (2004). Physicians report on patient encounters involving direct-to-consumer advertising [Electronic version]. *Health Affairs*, 219-233.
- Wilkes, M., S., Bell, R., A., & Kravitz, R., L. (2000). Direct-to-consumer prescription drug advertising: Trends, impact, and implications. [Electronic version]. *Health Affairs*, 19(2), 110.
- Woodside, A. G., & Davenport Jr., J. W. (1974). The effect of salesman similarity and expertise on consumer purchasing behavior [Electronic version]. *Journal of Marketing Research (JMR)*, 11(2), 198-202.
- World Health Organization. (1986). *Criteria for medicinal drug promotion*. Retrieved June 30, 2008, from <http://www.who.int/medicinedocs/collect/edmweb/pdf/whozip08e/whozip08e.pdf>

- Yoon, S. J., & Choi, Y. G. (2005). Determinants of successful sports advertisements: The effects of advertisement type, product type and sports model [Electronic version]. *Journal of Brand Management*, 12(3), 191-205.
- Young, H. N., Lipowski, E. E., & Cline, R. J. W. (2005). Using social cognitive theory to explain consumers' behavioral intentions in response to direct-to-consumer prescription drug advertising [Electronic version]. *Research in Social & Administrative Pharmacy*, 1, 270-288.
- Zachry, W. M., Dalen, J. E., & Jackson, T. R. (2008). Clinicians' responses to direct-to-consumer advertising of prescription medications [Electronic version]. *Archives of Internal Medicine*, 163, 1808-1812.

“One pill of Seigrella relieves allergy symptoms all day. I don’t only prescribe it, but I also take it.”

*Dr. Robert Brown,
Board Certified Allergist*

**Don’t wait another day.
Ask your doctor if Seigrella is right for you.**

Prescription Seigrella can give you powerful, 24-hour symptom relief this allergy season. It’s a tiny pill. It’s fast acting and it provides long lasting symptom relief* for your indoor and outdoor allergies.

Do not take Seigrella if you are allergic to cetirizine or Zyrtec. Be sure to tell your doctor if you have kidney disease. Patients taking Seigrella should avoid operating machinery or driving a motor vehicle. Taking Seigrella with alcohol or sedatives should be avoided. Take Seigrella at bedtime. Do not increase the dose due to increased risk of sleepiness.

In patients 12 years of age and older, side effects may include sleepiness, tiredness, sore throat and dry mouth. In children 6 -12 years of age, side effects may include fever, cough, sleepiness and nose bleeds.

1-877-Sei-grella • www.seigrella.com

Please see additional important information on adjacent page
To report suspected adverse reactions, contact BCU at 800-310-0815
*Symptoms relief began at 60 minutes after exposure to pollen and was still seen at 24 hours.

SEIGRELLA

Figure A1. Expert endorser ad

“One pill of Seigrella relieves my allergy symptoms all day.”

*Robert Brown,
Accountant
Houston, TX*

**Don’t wait another day.
Ask your doctor if Seigrella is right for you.**

Prescription Seigrella can give you powerful, 24-hour symptom relief this allergy season. It’s a tiny pill. It’s fast acting and it provides long lasting symptom relief* for your indoor and outdoor allergies.

Do not take Seigrella if you are allergic to cetirizine or Zyrtec. Be sure to tell your doctor if you have kidney disease. Patients taking Seigrella should avoid operating machinery or driving a motor vehicle. Taking Seigrella with alcohol or sedatives should be avoided. Take Seigrella at bedtime. Do not increase the dose due to increased risk of sleepiness.

In patients 12 years of age and older, side effects may include sleepiness, tiredness, sore throat and dry mouth. In children 6 -12 years of age, side effects may include fever, cough, sleepiness and nose bleeds.

1-877-Sei-grella • www.seigrella.com

Please see additional important information on adjacent page
To report suspected adverse reactions, contact BCU at 800-310-0815
*Symptoms relief began at 60 minutes after exposure to pollen and was still seen at 24 hours.

SEIGRELLA

Figure A2. Typical consumer endorser ad

“One pill of Seigrella relieves my allergy symptoms all day.”

*Tom Selleck
Actor and Producer*

**Don’t wait another day.
Ask your doctor if Seigrella is right for you.**

Prescription Seigrella can give you powerful, 24-hour symptom relief this allergy season. It’s a tiny pill. It’s fast acting and it provides long lasting symptom relief* for your indoor and outdoor allergies.

Do not take Seigrella if you are allergic to cetirizine or Zyrtec. Be sure to tell your doctor if you have kidney disease. Patients taking Seigrella should avoid operating machinery or driving a motor vehicle. Taking Seigrella with alcohol or sedatives should be avoided. Take Seigrella at bedtime. Do not increase the dose due to increased risk of sleepiness.

In patients 12 years of age and older, side effects may include sleepiness, tiredness, sore throat and dry mouth. In children 6 -12 years of age, side effects may include fever, cough, sleepiness and nose bleeds.

1-877-Sei-grella • www.seigrella.com

Please see additional important information on adjacent page
To report suspected adverse reactions, contact BCU at 800-310-0815
*Symptoms relief began at 60 minutes after exposure to pollen and was still seen at 24 hours.

SEIGRELLA

Figure A3. Celebrity endorser ad

Don’t wait another day.

Ask your doctor if Seigrella is right for you.

Prescription Seigrella can give you powerful, 24-hour symptom relief this allergy season. It’s a tiny pill. It’s fast acting and it provides long lasting symptom relief* for your indoor and outdoor allergies.

Do not take Seigrella if you are allergic to cetirizine or Zyrtec. Be sure to tell your doctor if you have kidney disease. Patients taking Seigrella should avoid operating machinery or driving a motor vehicle. Taking Seigrella with alcohol or sedatives should be avoided. Take Seigrella at bedtime. Do not increase the dose due to increased risk of sleepiness.

In patients 12 years of age and older, side effects may include sleepiness, tiredness, sore throat and dry mouth. In children 6 -12 years of age, side effects may include fever, cough, sleepiness and nose bleeds.

1-877-Sei-grella • www.seigrella.com

Please see additional important information on adjacent page
To report suspected adverse reactions, contact BCU at 800-310-0815
*Symptoms relief began at 60 minutes after exposure to pollen and was still seen at 24 hours.

SEIGRELLA

Figure A4. No endorser ad

APPENDIX B

Thank you for taking the survey. Please select the responses that best reflect your opinion. Do not put your name on the survey. It's anonymous. Please do not ask me questions when taking the survey. Once you complete the survey, place the survey in the black drop box, and give me the plastic folder with the ad. Make sure to pick up one of the folded papers next to the black drop box. It includes important information about the study. If you have any questions, you can contact me at ranas67054@yahoo.com.



1. Have you taken this survey before? Yes No
- If yes, please stop taking the survey and return the ad and survey to the researcher.
 - If no, please go ahead and complete the survey.

2. On a scale of 5 (Strongly Agree) to 1 (Strongly Disagree), please circle the number in each of the following which best indicates your *overall attitude toward the ad*.

	Strongly Agree Disagree	Agree	Neutral	Disagree	Strongly
2a. Interesting	5	4	3	2	1
2b. Effective	5	4	3	2	1
2c. Informative	5	4	3	2	1
2d. Believable	5	4	3	2	1
2e. Clear	5	4	3	2	1

3. On a scale of 5 (Extremely Favorable) to 1 (Not at All Favorable), please circle the number which best indicates your *overall attitude towards Seigrella allergy medication*.

Extremely Favorable	Favorable	Neutral	Not Favorable	Not at All Favorable
5	4	3	2	1

4. On a scale of 5 (Extremely Likely) to 1 (Not at All Likely), please circle the number which best indicates how likely are you to *ask* your doctor for more information about *Seigrella*?

Extremely Likely	Likely	Neutral	Not Likely	Not at All Likely
5	4	3	2	1

5. On a scale of 5 (Extremely Likely) to 1 (Not at All Likely), please circle the number which best indicates how likely are you to ask your doctor to *prescribe* you *Seigrella*?

Extremely Likely	Likely	Neutral	Not Likely	Not at All Likely
5	4	3	2	1

6. What is your gender? Male Female

7. What is your age range? 18 to 24 25 to 34 35 to 49 50 to 64 65 and older

8. Are you getting an allergy shot today? Yes No

Thank you for taking the survey. Please select the responses that best reflect your opinion. Do not put your name on the survey. It's anonymous. Please do not ask me questions when taking the survey. Once you complete the survey, place the survey in the black drop box, and give me the plastic folder with the ad. Make sure to pick up one of the folded papers next to the black drop box. It includes important information about the study. If you have any questions, you can contact me at ranas67054@yahoo.com.



"One pill of Seigrella
relieves my allergy
symptoms all day."
Robert Brown, accountant
Houston, TX

1. Have you taken this survey before? Yes No
- If yes, please stop taking the survey and return the ad and survey to the researcher.
 - If no, please go ahead and complete the survey.

2. On a scale of 5 (Strongly Agree) to 1 (Strongly Disagree), please circle the number in each of the following which best indicates your *overall attitude toward the ad*.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2a. Interesting	5	4	3	2	1
2b. Effective	5	4	3	2	1
2c. Informative	5	4	3	2	1
2d. Believable	5	4	3	2	1
2e. Clear	5	4	3	2	1

3. On a scale of 5 (Extremely Favorable) to 1 (Not at All Favorable), please circle the number which best indicates your *overall attitude towards Seigrella allergy medication*.

Extremely Favorable	Favorable	Neutral	Not Favorable	Not at All Favorable
5	4	3	2	1

4. On a scale of 5 (Extremely Likely) to 1 (Not at All Likely), please circle the number which best indicates how likely are you to *ask your doctor for more information about Seigrella?*

Extremely Likely	Likely	Neutral	Not Likely	Not at All Likely
5	4	3	2	1

5. On a scale of 5 (Extremely Likely) to 1 (Not at All Likely), please circle the number which best indicates how likely are you to ask your doctor to *prescribe you Seigrella?*

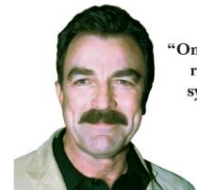
Extremely Likely	Likely	Neutral	Not Likely	Not at All Likely
5	4	3	2	1

6. What is your gender? Male Female

7. What is your age range? 18 to 24 25 to 34 35 to 49 50 to 64 65 and older

8. Are you getting an allergy shot today? Yes No

Thank you for taking the survey. Please select the responses that best reflect your opinion. Do not put your name on the survey. It's anonymous. Please do not ask me questions when taking the survey. Once you complete the survey, place the survey in the black drop box, and give me the plastic folder with the ad. Make sure to pick up one of the folded papers next to the black drop box. It includes important information about the study. If you have any questions, you can contact me at ranas67054@yahoo.com.



"One pill of Seigrella
relieves my allergy
symptoms all day."
Tom Selleck
Famous actor

1. Have you taken this survey before? Yes No
- If yes, please stop taking the survey and return the ad and survey to the researcher.
 - If no, please go ahead and complete the survey.

2. On a scale of 5 (Strongly Agree) to 1 (Strongly Disagree), please circle the number in each of the following which best indicates your *overall attitude toward the ad*.

	Strongly Agree Disagree	Agree	Neutral	Disagree	Strongly
2a. Interesting	5	4	3	2	1
2b. Effective	5	4	3	2	1
2c. Informative	5	4	3	2	1
2d. Believable	5	4	3	2	1
2e. Clear	5	4	3	2	1

3. On a scale of 5 (Extremely Favorable) to 1 (Not at All Favorable), please circle the number which best indicates your *overall attitude towards Seigrella allergy medication*.

Extremely Favorable	Favorable	Neutral	Not Favorable	Not at All Favorable
5	4	3	2	1

4. On a scale of 5 (Extremely Likely) to 1 (Not at All Likely), please circle the number which best indicates how likely are you to *ask* your doctor for more information about *Seigrella*?

Extremely Likely	Likely	Neutral	Not Likely	Not at All Likely
5	4	3	2	1

5. On a scale of 5 (Extremely Likely) to 1 (Not at All Likely), please circle the number which best indicates how likely are you to ask your doctor to *prescribe* you *Seigrella*?

Extremely Likely	Likely	Neutral	Not Likely	Not at All Likely
5	4	3	2	1

6. What is your gender? Male Female

7. What is your age range? 18 to 24 25 to 34 35 to 49 50 to 64 65 and older

8. Are you getting an allergy shot today? Yes No

Thank you for taking the survey. Please select the responses that best reflect your opinion. Do not put your name on the survey. It's anonymous. Please do not ask me questions when taking the survey. Once you complete the survey, place the survey in the black drop box, and give me the plastic folder with the ad. Make sure to pick up one of the folded papers next to the black drop box. It includes important information about the study. If you have any questions, you can contact me at ranas67054@yahoo.com.

1. Have you taken this survey before? Yes No

- If yes, please stop taking the survey and return the ad and survey to the researcher.
- If no, please go ahead and complete the survey.

2. On a scale of 5 (Strongly Agree) to 1 (Strongly Disagree), please circle the number in each of the following which best indicates your *overall attitude toward the ad*.

	Strongly Agree Disagree	Agree	Neutral	Disagree	Strongly
2a. Interesting	5	4	3	2	1
2b. Effective	5	4	3	2	1
2c. Informative	5	4	3	2	1
2d. Believable	5	4	3	2	1
2e. Clear	5	4	3	2	1

3. On a scale of 5 (Extremely Favorable) to 1 (Not at All Favorable), please circle the number which best indicates your *overall attitude towards Seigrella allergy medication*.

Extremely Favorable	Favorable	Neutral	Not Favorable	Not at All Favorable
5	4	3	2	1

4. On a scale of 5 (Extremely Likely) to 1 (Not at All Likely), please circle the number which best indicates how likely are you to *ask your doctor for more information about Seigrella?*

Extremely Likely	Likely	Neutral	Not Likely	Not at All Likely
5	4	3	2	1

5. On a scale of 5 (Extremely Likely) to 1 (Not at All Likely), please circle the number which best indicates how likely are you to ask your doctor to *prescribe you Seigrella?*

Extremely Likely	Likely	Neutral	Not Likely	Not at All Likely
5	4	3	2	1

6. What is your gender? Male Female

7. What is your age range? 18 to 24 25 to 34 35 to 49 50 to 64 65 and older

8. Are you getting an allergy shot today? Yes No

APPENDIX C

Receptionist introduces researcher to patient:

“I would like to let you know that we are having a Ph.D. student join us these few weeks. She is working with Dr. Van Bavel and Dr. Barstow on her dissertation. She will be approaching you to see if you would like to take a short survey about an ad for an allergy prescription medicine.”

Nurse introduces researcher to patient:

“I would like to let you know that we are having a Ph.D. student join us these few weeks. She is working with Dr. Van Bavel and Dr. Barstow on her dissertation. After you take your shot, she will approach you in the waiting room and see if you would like to take a short survey about an ad for an allergy prescription medicine.”

Researcher introduces herself to the patient

“My name is Rana Salman. I’m a Ph.D. student working with Dr. Van Bavel and Dr. Barstow on my dissertation. I’m going to be in the clinic for the next few weeks to get patients’ opinion about an ad for an allergy prescription medicine. I wanted to see if you have 10 minutes before or after your appointment to look at the ad and take a short survey. The questions in the survey do not ask you for any medical information, nor does it ask you for any personal information. In fact, it is anonymous, so please do not put your name on the survey. Also taking part in the survey is voluntary and if at anytime while taking the survey, you decide that you don’t want to take part in the study, you can throw away the survey and give me the plastic folder with the ad. Will you be interested in taking the survey? “

If the patient agrees to take part in the study, then the researcher will say:

“When you are done with the survey, please fold it and drop it in that black survey drop box. Please return the plastic folder with the ad to me. In addition, make sure to take one of the folded papers that are next to the black survey drop box. It’s important to the study. Please read the paper when you leave the waiting room. After reading the paper, if you have any questions, I’ve provided my contact information. Please contact me, and I will try to answer all of your questions.”

If the patient asks about the purpose of the study, then the researcher will say:

“I’m studying patients’ attitudes toward direct to consumer advertisements.”

If the patient asks if the ad and/or drug in the ad are real, the researcher will say:

“Assume it is.”

APPENDIX D

[ENTER DATE]

Greetings,

Thank you for taking part in the survey and helping me in my dissertation. Once again, I am conducting this study to find out patients' opinions about an ad for a prescription medication that treats allergies, and specifically to identify whether there is a difference in responses toward the prescription drug ad based on endorser type (i.e., doctor endorser, celebrity endorser, typical consumer endorser, and no endorser).

Please note that the drug in the ad and the ad itself are NOT REAL. So, please do not ask your doctor about the allergy prescription medication. I appreciate all the help that you provided me. If you have any questions about my study, please e-mail me at ranas67054@yahoo.com, and I will try to answer any of your questions. Again thank you for taking part in the survey.

I would also appreciate if you do not discuss this study with any other allergy patients of this clinic until after I complete collecting my data (November 17, 2008). This will help me obtain accurate data about each patient's true attitudes and behaviors toward the ad and the drug.

Regards,

Rana Salman