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Direct-to-Consumer Advertising: How Does it Affect Consumers' Perceptions About Treatment?

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DIRECT-TO-CONSUMER ADVERTISING:

HOW DOES IT AFFECT CONSUMERS' PERCEPTIONS ABOUT TREATMENT?

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Title: Direct-to-Consumer Advertising: How Does it Affect Consumers' Perceptions About Treatment?

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This study investigated the impact pharmaceutical advertising has on participants' allocation of monetary resources to treat depression. The study randomly selected undergraduate students from the General Psychology subject pool at Indiana University of Pennsylvania (N=193). Demographic data was collected and participants were evaluated for beliefs and knowledge about prescription medications, personal and family history of depression and, in order to mask the true purpose of the study, past behaviors and beliefs about prescription medications and herbal supplements. Participants were assigned randomly to one of two groups: one in which participants were shown a series of videos on depression including an informative piece, a piece on psychotherapy for depression, a piece on pharmacological treatments for depression, a section on herbal treatment for depression, and a pharmaceutical advertisement for depression medication. The second version contained the same video clips with the pharmaceutical advertisement removed and replaced with a public service announcement about depression. All participants were asked to allocate $500 in $50 increments among a variety of strategies to treat the depression of a character in a vignette. The findings were analyzed using ANCOVA, Hierarchical Multiple Regression, and a T-test. The results of this study indicated that pharmaceutical advertising may not impact college students' decision to allocate more money for medication when treating depression. This study also

found exposure to pharmaceutical advertisement information does not impact endorsement of mild to moderate depression. While it was not a primary hypothesis, positive attitude towards DTCA (direct-to-consumer advertising) appeared to increase allocation of money to antidepressants. Also positive attitude toward antidepressant use increased the amount of money allocated to antidepressant use and should be further explored.

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CHAPTER I

INTRODUCTION

Statement of the Problem

Advertising is a powerful tool for marketing products to consumers. Advertisements bring attention to a product through some form of public media and attempt to persuade the consumer to use the company's product (Soanes & Stevenson, 2008). Direct-to-consumer advertising (DTCA) can be described as advertising presented directly to consumers through television, radio, or print (Naik, Borrego, Gupchup, Dodd, & Sather, 2007). These advertisements not only use rational appeals (e.g., listing product benefits and convincing proof), but they also use emotional appeals to convince the consumer to use their product (Main, Argo, & Huhmann, 2004). Sometimes these advertisements are so convincing that the consumer will react unfavorably to a physician if they do not prescribe the medication (Khanfar, Loudon, & Sircar-Ramsewak, 2007).

The United States and New Zealand are the only countries that allow DTCA of pharmaceuticals. Other countries have banned DTCA because of the belief that the disadvantages or harm that may occur due to these advertisements outweighs the benefits (Weber, 2006).

By 2001, DTCA for medication in the U.S. had increased to $3 billion and continues to rise. In 2009 IMS Health, an independent consulting company that provides data to the pharmaceutical companies as well as the Food and Drug Administration (FDA), many state, and federal agencies, found that spending on DTCA for medication was at a staggering $4.3 billion, while advertising in professional journals was only $315

million (IMS Health, 2009). Advertising slogans such as "depression hurts," "Ask your doctor if the purple pill is right for you," or "When the moment is right will you be ready?" have become as well known as slogans for popular foods, clothing lines, and restaurants (Brownfield, Bernhardt, Phan, Williams, & Parker, 2004).

To Americans, pharmaceutical advertising on television seems to be a part of everyday life (Frosch, Krueger, Hornik, Cronholm, & Barg, 2007; Naik et al., 2007; Schweitzer, 2007). Previous research indicates that, between the hours of 6pm and 8pm, there are an average of 18.1 minutes of prescription pharmaceutical advertisements aired on each television network (Brownfield et al., 2004). An average person in the United States is exposed to nine DTC advertisements per day, or as many as 16 hours of ads for prescription medications per year (Frosch et al., 2007; Main, Argo, & Huhmann, 2004). In 1999, 24 of the most heavily advertised medications had a growth in sales by 41.7%, while growth in sales for all other medications was 14.4% (Findlay, 2001). These statistics suggest that pharmaceutical companies are seeing a significant positive return on their DTCA dollars spent.

Findlay (2001) reports that DTCA is:

1. "Alerting consumers to medications from which they may benefit.
2. Increasing the number of people who are taking a needed and well tolerated medicine.
3. Increasing or decreasing the number of people who are taking prescription drugs they either do not need or may be unsafe for them.
4. Reducing the burden of disease, morbidity and mortality; or
5. Increasing or decreasing overall healthcare expenditures" (p 112).

DTCA of pharmaceuticals is governed by the FDA. The FDA mandates that DTC advertisements that name the medication, what disease state the medication treats , and must also present a fair balance of the medications risks and benefits in the advertisement. It is the FDA's responsibility to ensure that there is a "fair balance" of risk and benefit information in DTC advertisements. The phrase "fair balance" signifies that a product claim advertisement must balance drug risk information with the benefits of the medication. The content and the presentation of the medication's risks must be in proportion to those of the benefits. However, the amount of time that an advertisement gives to risks and benefits is up to the discretion of the advertisement company. The time distribution depends on the drug's risks and the way the advertiser decides to present the material (FDA, 2009). It is presumed that consumers will be able to make an informed evaluation about the medication if there is "fair balance" in the advertisement (Davis, 2007).

Prior to 1997, there were no clear guidelines regarding what could and could not be included in pharmaceutical advertisements. In 1997 the FDA developed guidelines for pharmaceutical companies to follow when developing advertisements. Pharmaceutical companies are now allowed to broadcast advertisements that identify benefits of the medication, contraindications, and a reference to a location, such as a website or article, where more information may be obtained (Schweitzer, 2007; Thomaselli, 2006). The ability to defer negative information about the drug to another information source allows the advertiser to provide people with limited information regarding risks and to shift the responsibility to the consumers to educate themselves about risks.

There are three types of pharmaceutical advertisements that the FDA recognizes: reminder ads, help-seeking ads, and product claim ads. Reminder advertisements bring attention to the name of the drug only. There are no specifics about the drug such as benefits or side effects. Help-seeking ads describe the symptoms of a disorder, but provide no drug information. The advertisement encourages the consumer to see their doctor for more information if they believe they have the symptoms of the specific disorder. Finally, the product claim ad includes the name of the drug, the indications, and the side effects (Khanfar et al., 2007; Schweitzer, 2007). The FDA only requires a balance of benefit and risk information in product claim advertisements, not in reminder or help-seeking ads.

As pharmaceutical advertising has increased so has the controversy surrounding these advertisements. Supporters of DTCA believe that advertising increases awareness of new medications and allows consumers to become responsible for their health care. Critics of DTCA argue that advertising often gives consumers misleading information about medications and may negatively impact the physician-patient relationship (Martinez & Lewis, 2009). This debate has fueled research on the effects of DTCA on consumer perceptions and behavior.

One diagnosis that has received much attention is depression. The increase in pharmaceutical advertising coincides with an increase in depression diagnoses and prescriptions for antidepressants (An, Jin, & Brown, 2009). Previous research has indicated that antidepressants are the most popular form of treatment for adult depression despite other nonpharmaceutical alternatives (Jureidini & Tonkin, 2006). Before the FDA issued the black box warning for “risk of suicidality”, in 2004, antidepressant use

among adolescents was increased. After the FDA issued the black box warning, antidepressant use in adolescents decreased. One study showed a 96.25% acceptance of antidepressant prescriptions pre-warning and 74.44% post-warning prescription acceptance by guardians (Singh, Prakash, Rais, and Kumari, 2009).

Current research indicates that an increased number of students on college campuses are seeking help for depression at university counseling centers (Benton, Robertson, Tseng, Newton, & Benton, 2003). DTCA may prompt students to seek unwarranted pharmacological solutions for issues related to basic life stressors typically associated with college. This could be dangerous as an increase for suicidal symptoms when using antidepressants is seen in young adults age 18-24, as indicated by the black box warning update which occurred in 2007 (FDA, 2007). The current black box warning, which must be included at the beginning of the package insert, reads:

> "Antidepressants increased the risk compared to placebo of suicidal thinking and behavior (suicidality) in children, adolescents, and young adults in short-term studies of major depressive disorder (MDD) and other psychiatric disorders. Anyone considering the use of [Insert established name] or any other antidepressant in a child, adolescent, or young adult must balance this risk with the clinical need. Short-term studies did not show an increase in the risk of suicidality with antidepressants compared to placebo in adults beyond age 24; there was a reduction in risk with antidepressants compared to placebo in adults aged 65 and older. Depression and certain other psychiatric disorders are themselves associated with increases in the risk of suicide. Patients of all ages who are started on antidepressant therapy should be monitored appropriately and

observed closely for clinical worsening, suicidality, or unusual changes in behavior. Families and caregivers should be advised of the need for close observation and communication with the prescriber. [Insert Drug Name] is not approved for use in pediatric patients. [The previous sentence would be replaced with the sentence, below, for the following drugs: Prozac: Prozac is approved for use in pediatric patients with MDD and obsessive compulsive disorder (OCD). Zoloft: Zoloft is not approved for use in pediatric patients except for patients with obsessive compulsive disorder (OCD). Fluvoxamine: Fluvoxamine is not approved for use in pediatric patients except for patients with obsessive compulsive disorder (OCD).] (See Warnings: Clinical Worsening and Suicide Risk, Precautions: Information for Patients, and Precautions: Pediatric Use)." (FDA, 2007, http://www.fda.gov/Drugs/DrugSafety/InformationbyDrugClass/ucm096273.htm)

The present study examined the influence of DTCA on college student's decisions about the treatment of depression.

CHAPTER II

REVIEW OF RELATED LITERATURE

Attitudes and Persuasion

Attitudes that a person holds about DTCA can affect the impact experienced from exposure to an advertisement for medication. Attitudes can be defined as a way of thinking or feeling which allow a person to evaluate things in a certain way. Attitudes are related to a person's behavior and, if you can change their attitudes, you may also be able to change his/her behavior. The theory of reasoned action states that attitudes influence a person's behavioral intentions which, in turn, influence behavior (Ajzen, I., & Fishbein, M., 1980). This has been used to predict a variety of behaviors from physician prescription behaviors relating to emergency contraception (Sable, Schwartz, Kelly, Lisbon & Hall, 2006) to the decision to donate one's organs (Jeffres, Carroll, Rubenking, & Joe, 2008).

When making a decision, people rarely evaluate the accuracy of the information they use as the basis for the judgment (Shrum & O'Guinn, 1993). Information that is easily accessed is what helps the person make their decision (Shrum, 1996). Frequency, vividness, and how recently the person was exposed to the information enhance the person's recall. It has been argued that heavy television viewing increases the accessibility of certain information and that this information impacts people's social judgments (Shrum, 1996). Shrum (1996) found that people who viewed soap operas for 5 hours or more per week estimated real-world crime rates, and certain occupations, as being higher than people who did not watch soap operas, and they also responded faster

than light viewers. These findings seem to support the idea of accessibility in the decision making process.

Shapiro, MacInnis, and Heckler (1997) found that ad exposure can increase the likelihood of that product being included in the consideration set when future purchase decisions are made. The participants were undergraduate marketing students. The method involved use of a computer-controlled magazine. The computer screen was divided into three columns. The middle column contained an article on which the participants were to focus. The right and left hand columns contained other articles and advertisements. The focus article was designed to keep the participants from focusing on the advertisements. Participants were asked to read the article and remember as much information about it as they could while moving a cursor so, when the next line of the advertisement scrolled up automatically, the cursor (happy face) would be in the space between two words. They were then presented with a list of products from which they chose products they would likely buy. The participants were more likely to choose products that were featured in the advertisements with which they were tested. This shows that advertising has the potential to affect purchasing behavior, even when the client is distracted while reading the advertisement.

Although advertisements can persuade a consumer to think about the product when making purchasing decisions, there are also other factors that can influence a consumer. Reactance theory states that, when a person feels his/her freedom to choose is threatened, they will try to restore their sense of freedom by exhibiting opposition (Brehm, 1966). According to this theory, people who distrust DTCA and believe that ads are misleading are expected to be less likely to want to use the product advertised.

Martinez (2009) found that women's exposure to antidepressant and anti-anxiety medication advertisements played a role in their opinion about prescription drug use to treat depression and anxiety in youths. This study also found that attitude towards DTCA moderated the effect of ad exposure on support for medications to treat depression and anxiety in youth. People that had high level of distrust for DTCA were less likely to endorse the use of medication. These findings show that a consumer's attitude about DTCA may have an impact on how the consumer makes decisions as well.

Types of Appeals in Advertisements

Pharmaceutical advertising, similar to other types of advertising, uses different types of appeals and language to convince the consumer that they should use the product. Frosch et al. (2007) analyzed pharmaceutical advertisements that were televised between 8 and 11pm during four weeks in June 2004. These advertisements were on networks with the most viewers (ABC, CBS, NBC, and Fox). They identified seven different appeals used in advertising: rational appeals, positive emotional appeals, negative emotional appeals, humor appeals, fantasy appeals, sex appeals, and nostalgic appeals. More than one of these appeals were used in a single advertisement. They found that 86% of ads used rational appeals, almost all ads used positive emotional appeals (95%), and 69% of ads used negative emotional appeal. Most advertisements used a combination of rational and emotional appeals. These findings are consistent with other findings addressing the types of appeals in advertisements (Macias, Pushupati, & Lewis, 2007; Main, Argo, & Huhmann, 2004).

Language used in advertisements has also been shown to affect a consumer's perceptions about the medication (Davis, 2007). Davis defined qualifying language as

text that is provided to give the viewer more information about a specific product claim or statement. The three most commonly used statements used are:

1) Severity/duration- These statements usually accompany a list of side effects to state that side effects are usually mild and not long-lasting
2) Conditional Language- This is usually the word "may" or "if" instead of using declarative statements such as "are." For example, instead of saying the side effects produced by this medication are nausea, diarrhea, and vomiting, the advertiser may choose to say some people may experience nausea, diarrhea, and/or vomiting.
3) Discontinuation- These statements refer to discontinuation of the product because of side effects. An example of this type of statement is "The medication may cause mild side effects, but most patients were not bothered enough to stop using the medication" (Davis, 2007)

Advertisers may use one or more types of qualifying language in advertisements. Davis found that the three common types of qualifying languages used by pharmaceutical companies have an effect on the likelihood that a viewer will request the medication as well as on the consumer's anticipated experience with the drug (2007). The sample consisted of 669 adults (59.8% female vs. 40.2% male) between the ages of 18 to 34 (36.5%) and 35 to 64 (61.9%). The participants were exposed to descriptions of three test drugs. Some descriptions used qualifying language and some did not. Then all the participants were asked questions about the likelihood they would request the medication and the perception of what their experience with the medication would be. Almost all of the participants reported they would be more likely to request the medication when

qualifying language was used in the description and also believed that their experience with the medication would be more pleasant. It appears, based on this research, the language that advertisers use can also affect a person's medication choices.

Advertising is directed at persuading the consumer to use the product. It is important to take into account the fact that people are influenced by advertising when trying to make decisions. These advertisements could be providing the consumer with information that will help the consumer to make an informed decision or they could be placing undue influence on the consumer.

History of Pharmaceutical Advertising

In 1963, the FDA first thought about regulating drug advertising. By 1985, DTC advertising was held to the same standards as pharmaceutical promotion to physicians. The regulations stated that pharmaceutical advertisements were required to have "fair balance," "full disclosure," and include a summary of side effects, contraindications, and effectiveness (Dukes, 2001). This was virtually the product's whole approved label. Pharmaceutical advertisements began to appear in print, but the regulations at this time made broadcast advertising too costly, in most cases, because almost the whole label needed to be included in the advertisement. To clarify the requirements for balanced content and nonmisleading advertising of medications direct to consumers, the FDA issued new guidelines in 1997. The guideline established that media advertising (radio and TV) no longer needed to include the detailed medical information about risks and side effects that were found in print ads (Rosenthal, Berndt, Donohue, Frank, & Epstein, 2002). With these changes the pharmaceutical companies only needed to include major

side effects and contraindications with a reference to a location where more information could be obtained (e.g., website, health care professionals, 1-800 number).

Since the regulations for advertising changed in 1997, spending on DTC pharmaceutical advertising has rapidly increased. In 1996, DTC advertising only accounted for 9% of the money spent on pharmaceutical advertising and, in 2000, it accounted for about 16% (Rosenthal et al., 2002). The reasons for this increase in DTC advertising may include, but are not limited to, the growing desire of patients to have more involvement in their health care decisions, changes in FDA regulations, and increases in managed care. This increase in DTCA spending indicates that consumers are being exposed to more advertisements. The implications of the increased spending on DTCA depend on how consumers perceive and act on the information presented to them.

Pharmaceutical Advertising Today

Research has shown that medications used to treat depression, allergies, high cholesterol, gastric reflux, and asthma are among the most heavily advertised medications (Rosenthal et al., 2002; Schweitzer, 2007). These medications account for nearly 60% of all DTCA and have the largest market and, therefore, are likely to bring in the most profit. Sales for heavily advertised medications are found to rise faster than sales for medications that are not as heavily advertised (Schweitzer, 2007). Gahart, Duhamel, Dievler, and Price (2003) found that, between 1999 and 2000, the number of prescriptions for heavily advertised medications rose by 25%, whereas, prescriptions for medications that were not as heavily advertised only went up 4%. It is clear that advertising has a significant payoff for the pharmaceutical companies, but it is less clear whether it benefits public health.

A study conducted by Macias et al. (2007) found that print DTCA seems to be more focused on medical information than DTCA on television. They found five pieces of information that were present in a greater degree in print advertising: condition name, success rate of the medication, how quickly the medication works, precursors, and alternative treatments. These results seem to support the idea that print advertisements may be more educational and, therefore, more beneficial to the consumer. Television ads are supposed to be driving consumers to seek more information about the product from the web, print ads, or a 1-800 number. Khanfar et al., 2007 found that only about 17% of people are seeking more information through these various forms after seeing a televised advertisement. People may only be aware of the information presented to them in an advertisement, which may not be educational, leading them to make uninformed healthcare decisions.

The pharmaceutical industry's intent to sell more drugs may not be compatible with improving the public's health. A pharmaceutical company's advertisement directs people towards only one pharmaceutical option for treatment, whereas, other treatment options (including other medications) may be safer and have a similar efficacy. It is important to know if the consumer is receiving all of their information from the television alone as this may impact their healthcare decisions.

FDA Regulations

The FDA has developed many regulations regarding DTCA of prescription medications. These regulations are intended to keep consumers safe and to keep pharmaceutical companies honest in their advertisements. Print advertisements must provide a "brief summary," which is defined as a true statement about the side effects,

contraindications, and effectiveness of the medication. Broadcast advertisements (radio & television) are required to disclose the medications major risks, but do not need to include a brief summary. Instead, broadcast advertisements must make an "adequate provision" to provide the packaging label information to the consumer. The adequate provision can be a toll-free number, references to print advertisements, a website, or a statement that directs the consumer to their physician for more information. The FDA encourages the advertiser to use all four sources to provide consumers with information (Dukes, 2001).

Pharmaceutical companies are also required by the FDA to present true statements about their medications. If part of the advertisement is untrue or misleading, it cannot be corrected by including reference to another part of the ad (Dukes, 2001). According to the Code of Federal Regulations (2009) advertisement may be false, misleading, or lacking in fair balance if it:

1) Uses tables or graphs that misrepresent differences among the variables.
2) Refers to favorable information from a study that is unable to support such conclusions because of inadequate design or scope.
3) Uses statistical analyses retrospectively to look for findings that are not supported by the study.
4) Contains statements that seem like statistical analyses and interpretations that are inconsistent with statistical theory and method.
5) Makes claims about the mechanism of action that are not supported by scientific evidence without disclosing that these claims are not established.

6) Fails to provide information about the side effects and contraindications with the same importance and readability as the information about the medications' effectiveness.

Pharmaceutical advertisements are only allowed to discuss the uses of the medications that have been approved. Even though physicians can prescribe medications off-label (i.e., for uses other than what the medication has been approved for), pharmaceutical companies are restricted in the ways they can promote the medication (Dukes, 2001). They are not allowed to promote off-label use of medications.

The FDA does not require advertisements to be submitted for approval prior to the ad being shown to the public except in exceptional circumstances. An example of exceptional circumstances are when the FDA receives information that a medication may be fatal or cause serious injuries and the company does not report this information in an adequate way despite being instructed by the FDA to do so. Companies are allowed to submit their advertisements for feedback before running their advertisement to ensure that their advertisement meets the FDA's guidelines (FDA, 2009). Advertisements are not required to state the price of the medication, whether there is a generic version, if there is a similar drug with fewer risks that treats the condition, how many people have the condition, the mechanism of action, how quickly the consumer can expect the medication to work, or how many people taking the drug will be helped by it (FDA, 2009).

If a company does not follow the FDA's regulations, the FDA can take action against them. The most subtle action the FDA may take is sending a letter to the pharmaceutical company stating their objections to the advertisement. If the problem is

not corrected, a warning letter would be sent telling the company that they need to stop running the offending advertisement and could also include information to help the promoter take corrective actions. The FDA can also stop the company from running any advertisements for that product and seize the product. The most drastic action the FDA could take against the offending company is to pursue criminal charges against the company (Dukes, 2001).

These regulations are in place to protect the consumer. As more people are being exposed to pharmaceutical advertising and basing their health care decisions on this information, these regulations set forth by the FDA have become more important than ever before.

Limits of the FDA

In 2007, 59 letters citing violations in drug promotions were sent out by the FDA. These violations included false advertising, misleading ads, lack of balance in ads, or promotion of a product before approval (Center for Drug Evaluation and Research, 2005). Twenty of these letters were initial warning letters letting the company know that there was something about their advertisement that needed to be changed, and 39 were follow-up letters. This shows that potentially misleading information can be presented to the public before the FDA notices. Since 2002 there has been an increase in letters the

FDA issues each year for violations (See Fig 1).

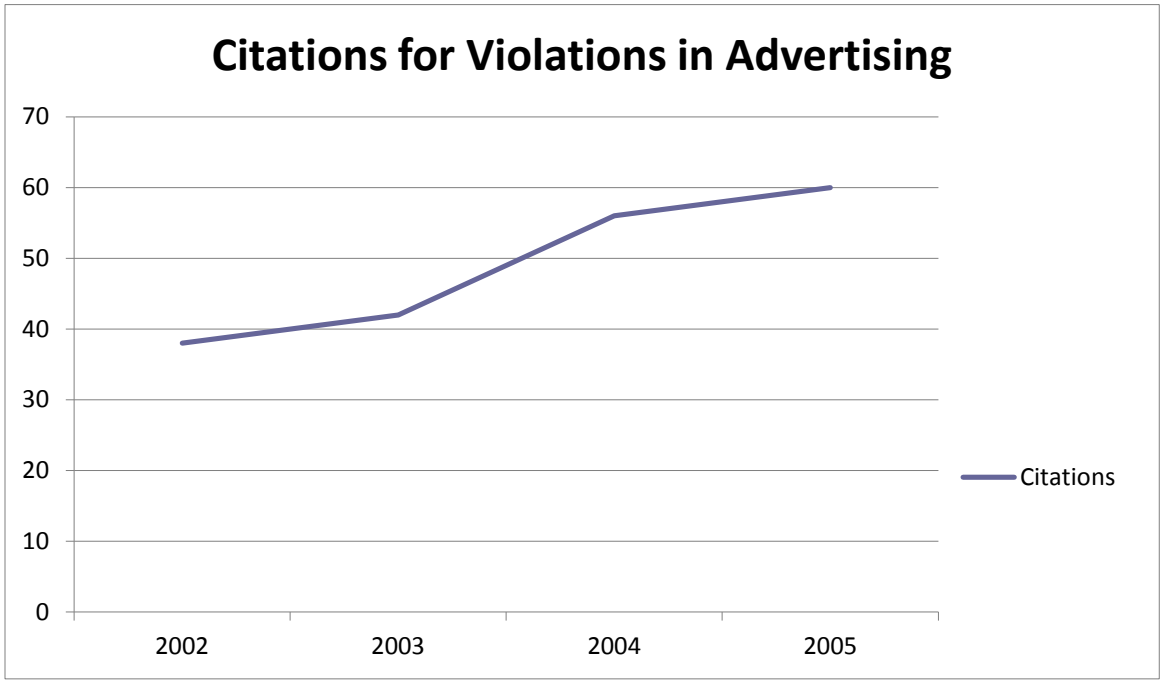

Figure 1: Drug promotion letters citing violations that are sent to the pharmaceutical companies.

Although the FDA is working hard to protect consumers, it may be limited in its effectiveness. The FDA pays closer attention to advertisements that are run on larger networks than it does to ads run on smaller networks. In one case an advertisement that was found to be misleading was run on a small network in Puerto Rico for two years before the FDA took over (Garhart et al., 2003). When an ad is cited for being misleading or false, it takes time for the company to receive the notice from the FDA and pull the advertisement. Many televised DTCA's are aired for a very short time. Previous research found that one-fifth of advertisements are on the air for only- one month and one-third are aired for two months or less (Garhart et al., 2003). By the time the citation reaches the pharmaceutical company, the advertisement may have already been seen by millions of

consumers. With current guidelines, an advertisement may run its cycle and be pulled off the air before the FDA assesses it for accuracy and "fair balance."

Macias et al. (2007) analyzed pharmaceutical advertisements from a 7 day period of time on four major broadcast networks (ABC, NBC, CBS, Fox) and three cable networks (CNN, MSNBC, and Lifetime) and found that DTCA on television is not doing a good job at meeting the fair balance requirement set forth by the FDA. There were 106 ads coded. For their study they identified four levels of fair balance: "lawbreakers, bare minimums, DTC main pack/peloton, and proactive group". The lawbreakers were ads that were not meeting fair balance requirements and only one ad fit into this category. Ten percent of advertisements were just meeting the bare minimum. The majority of the ads (88%) fell into the DTC main pack/peloton. This means that they were doing a little more than the minimum which helps them to fit in with other ads and avoid complaints. It seems that the advertisers look to each other to see what is appropriate in light of the absence of specific guideline for "fair balance" from the FDA. It is encouraging to find that the majority of advertisers are doing at least a little more than the minimum to meet the FDA's standards.

Benefits of Pharmaceutical Advertisements

There is an ongoing debate as to whether DTCA provides the consumer with information that helps them to make appropriate health care decisions, or whether DTCA is an unwanted influence on consumers that persuades them to make decisions that are not beneficial to their health. A survey done by Prevention magazine, in 2010, in conjunction with the FDA and Rodale (a global media company), found that 79% of consumers have seen and heard DTCA on television. Seventy-six percent reported that

they paid a lot/ some attention to the advertisements and that they found the information to be useful. This data was collected from a nationally representative sample of 1,501 adults within the United States. Many people reported seeing and paying attention to DTCA and this indicates a need to evaluate whether ads are educational and provide useful information to the public or not.

Supporters of DTCA believe that DTCA is necessary to inform consumers about health problems that they may not be aware of as well as informing them about their treatment options (Peyrot, Alperstein, Doren, & Poli, 1998). They say that DTCA makes people more aware of the symptoms of a disease that they may be suffering from so they are more likely to go to their doctor. A study carried out by Khanfar et al. (2009) found that, although 89.5% of people surveyed had seen a DTCA for gastroesophageal reflux disease, only 10% of participants discussed the medication with their physician. Almost half of those patient-physician discussions about the medication resulted in a change in the patient's medication. These findings show promise because some patients are initiating conversations with their physicians about medications and experiencing changes in treatment based on what they discussed. If the consumer is not made aware of the symptoms they may not talk to their physician about it and a disease that may be treatable will go untreated (Khanfar et al., 2009).

Broadcast media has been found to influence 35 to 40% of patients. After seeing the advertisement these patients are more likely to speak to their doctor about an issue they were having (Khanfar et al., 2007). Supporters of DTCA would say advertising provides the client with the information that they need about the medication, which then, in turn, encourages them to speak with their physician. People are becoming more

educated due to these advertisements and, therefore, they are better prepared to be active participants in their healthcare decisions. The consumer is more knowledgeable because DTCA presents the consumer with information regarding the medication, the condition, and/or the benefits and risks of the medication. Consumers can then use this knowledge to seek out the best treatment (Main et al., 2004).

A study done by Donohue and Berndt (2004) looked at whether increased spending on DTCA of a specific medication increased prescription rates. They focused on six antidepressants. Information from health insurance claims for medication was used to determine prescription rates. Data regarding spending for pharmaceutical advertising (print, radio, and television) for these medications was also obtained. The data collected was analyzed and they found a positive correlation between the number of antidepressant prescriptions per year and DTCA spending, but found DTCA for antidepressants had little impact on specific medication choices. These findings seem to support the argument that DTCA encourages people to seek treatment rather than persuading them to choose certain medications.

Disadvantages of Pharmaceutical Advertising

Critics of DTCA believe that pharmaceutical advertising leads the consumer to believe that medications are just another consumer product, like soap, snack food, cars, shampoo, etc. This belief may lead consumers to believe that they should be able to get medications as easily as other consumer products (Finlay, 2001). Critics assert that prescription medications should not be allowed to be advertised in the same way as everyday household products and that we should have more restrictions on pharmaceutical advertising.

Another point the critics of DTCA make is that pharmaceutical ads cannot be considered educational because they are lacking information. Previous content analysis of DTCA has found that the information in the ad is frequently incomplete. Bell, Wilkes, and Kravtiz (2000) analyzed 320 advertisements from popular magazines. The magazines were chosen based on the highest number of advertising pages sold between 1989 and 1996. The advertisements were then split into one of 14 medical conditions and coded by two independent coders. They coded claims into 11 education content codes such as prevalence, symptoms, success rate, and mechanism of action. It was found that information about success rates or alternative treatments were rarely included in the ads. If the advertisements were really as educational as they claim to be, there should be information about alternative medications as well as success rates included within the advertisement (Bell et al., 2000).

Main et al. (2004) conducted a content analysis of 365 print advertisements for prescription medications, over the counter remedies, and dietary supplements in popular magazines. Two independent coders identified the types of appeals present in the advertisement. These appeals could be rational appeals, positive emotional appeals, or negative emotional appeals. They found that DTCA relies more on emotional appeals than rational appeals when marketing medication. Frosch et al. (2007) found that 95% of advertisements used positive emotional appeals and 69% of advertisements used negative emotional appeals. Rational appeals were found in 86% of the advertisements. Emotional appeals have a greater persuasive impact, therefore, they are used more often (Main et al., 2004). This is problematic because risk and benefit information is paired with emotional appeals which may lead the consumer to be confused about the message in the

advertisement (Main et al., 2004). Advertising may be more about persuasion than about educating the consumer.

Some critics believe that pharmaceutical ads mislead consumers and the ads convince them to ask for medications that they may not need or that may be more expensive than other drugs or non-pharmacological treatments that may be as effective. Frosch et al. (2007) analyzed advertisements from peak television viewing times (8 to 11pm) on popular channels. They found that advertisements frequently presented limited information about the risk factors, prevalence of the condition, and populations at the greatest risk for the condition. Only 26% of advertisements made claims about the risk factors or the causes of the disease. Twenty-five percent of the advertisements analyzed made claims about the prevalence of the disease within the general population and, of these advertisements, only 25% gave specific information such as 1 in 12. Of the analyzed advertisements, only 8% identified specific population subtypes that are at greater risk of having the disease. Television ads tended to be ambiguous about whether consumers really needed the product. These findings are problematic because a telephone survey of 329 people (201 females, 128 males) between the ages of 18 and 70 living in Sacramento County found that 43% of consumers believe that only medications that are completely safe are allowed to be advertised (Bell, Kravitz, & Wilkes, 1999). Consumers see the advertisements and believe that the medication being advertised is the best medication and the best option to treat their condition.

Previous research also found that consumers incorrectly believed that the government checks advertisements before they are presented to the public; therefore, the commercials that they see are for the best medications (Bell et al., 1999; Naik, 2007). The

FDA does not require pharmaceutical advertisements to be submitted before they are distributed to the public unless there are extenuating circumstances (FDA, 2009). Therefore, the consumer may have a false sense of security about the medication.

Worldwide, most countries have banned or heavily regulate DTCA advertising due to the lack of evidence that says DTCA benefits the patient or the health care professionals taking care of that patient. They believe that it increases health care costs and unnecessary prescriptions (Khanfar et al., 2009). Because many countries have banned DTCA because of the belief that it provides no benefit to the patient or health care professional, it is important to discuss the perspective of the physician, the patient, and how DTCA affects the patient-physician relationship. There is a need to evaluate whether consumers and/or physicians see DTCA as being negative or positive and whether their relationship is affected by DTCA.

Perspective of Physicians

With DTCA affecting the medical information that patients have access to it is important to consider the physicians' and consumers' attitudes about DTCA as well as the effect it may have on their relationship. With DTCA, a visit to the physician may be a little different than what it was in the past. In the past, a patient would come in, describe their symptoms, and rely on the physician to make the diagnosis and prescribe something. Today, patients are taking more control over their health care. With more information available to the patient, they are now more likely to come in with an idea of what they may be suffering from as well as an idea of how they would like to be treated (Blose &Mack, 2009). One may infer that, in some ways, roles have been reversed. Rather than the physician making a recommendation and the patient accepting that recommendation

(or not), now the patient is making the recommendation and the physician must decide whether they want to accept the patient's recommendation. Because DTCA is causing changes in the information patients are receiving, it is important to look at how the physician views this information.

Physicians surveyed (N=322) by Morris, Gadson, & Burroughs (2006) reported that they felt that the benefits of DTCA outweighed the negative impacts of the advertising. These physicians were asked to complete surveys about DTCA at the 2006 National Medical Association Annual Convention in Dallas, TX. Sixty-six percent of the physicians reported that they felt patients benefited from DTCA, and 65% reported that they believe that physicians benefit from DTCA. Eighty percent of the physicians surveyed felt that DTCA helped to make their patients aware of treatment options and 64% felt that advertising helped people be more aware of problems earlier, which can lead to earlier diagnosis and treatment. They also noted that DTCA encouraged their patients to come in and speak with them; nearly half said that patients have come into their office just because of an advertisement they saw. Lastly, only 15% of these physicians reported that a problem was caused during a visit because a patient mentioned an advertisement. These responses regarding DTCA seemed overwhelmingly positive, but there were some concerns addressed as well.

Seventy-six percent of physicians surveyed felt that DTCA made people believe that medications are more effective than they really are and that DTCA confuses people about the risks and benefits of a medication (Morris et al., 2006). DTCA provides more information to the patient and it is believed that this information may cause the patient to question the physicians diagnosis. Sixty-five percent of the physicians surveyed felt that

this can occur (Morris, 2006). Physicians in this survey recognized that DTCA has some negative factors but, overall, they felt that it is positive and the benefits outweigh any risks

Mintzes et al. (2002) surveyed 78 physicians and 1431 of their adult patients to determine how DTCA affects prescribing. The survey was presented to patients before their visit and asked them questions about DTCA, expectations about their visit, sources of health information, beliefs surrounding the patient-physician relationship, and other demographic information. Immediately after the visit the physician was asked to fill out a survey as well regarding medications that were prescribed, whether the patient had requested the medication, and would you prescribe this medication for a similar patient with the same issue. Patients reporting more exposure to advertising tended to request more advertised medications. When the patient requested a medication, the physician reported filling that request 75% of the time, but 50% of the requests for medication the patient had seen advertised were not the best choice for that patient.

Overall, it seems that physicians are positive about the impacts of DTCA. They feel that this advertising can help bring the client into their office and may open up the lines of communication, but this advertising also has some risks. These risks include the patient believing that the effectiveness of the medication is higher than it really is and prescriptions getting distributed when it may not have been the treatment the physician would have originally recommended.

Patient Perspective

The goals of DTCA are to inform the patient about the medication being presented and to encourage them to use this medication. Previous research has found that

67% of people viewing television advertisements do not try to find out more information about the medication (Khanfar et al., 2007). This study was an e-mail survey randomly sent to 2,500 individual Internet addresses to which 478 people (65.9% females and 34.1% males) between the ages of 35 and 50 responded. The goals of this study were to determine what information consumers preferred to see included in DCTA and what actions the participants took after seeing an advertisement. The data suggest that consumers would like more information about side effects, effectiveness, and specific information about the disease in DTCA.

Another survey study found that 76% of patients have been exposed to DTCA in the two months prior to a visit with their physician (Allison-Ottey et al., 2003). This survey was given to 1065 patients (66% female, 34% male) in a physician's office before their visit. They were asked if they have seen or heard DTCA, if they made their appointment to discuss something they saw in an ad, if they have ever looked for more information after seeing an ad, and if DTCA helps them to be more informed. Twenty-one percent of the people surveyed reported that they were going to discuss a medication they had seen in an ad with the physician and 44% of people indicated they looked for more information because of an advertisement they saw. The findings in both these studies (Allison-Ottey et al., 2003; Khanfar et al., 2007) indicate that advertisements maybe influencing the decisions people make about medications.

DTCA seems to be influential in the decision making process of consumers, but consumers may not understand the nature of advertising. This was the focus of a study done by Bell et al. (1999). A telephone survey of 329 people (201 female, 128 male) between the ages of 18 and 70, living in Sacramento County was conducted. When the

participants were asked if regulations dictate that DTCA needed to be approved by the government before being shown to the public, approximately 50% said they believed this was true. Forty-three percent of the respondents thought that only "completely safe" medications could be advertised to the public, and 21% of people reported that they believe that only "extremely effective" medications could be advertised. It is problematic that people do not understand the nature of DTCA, but they are making decisions about health care based on this information.

Physician-Patient Relationship

As both physicians and consumers seem to be impacted by DTCA we can assume that the traditional patient/physician role has also been impacted. Blose and Mack (2009) used a scenario-based approach, in which the participants were asked to read one of four randomly presented scenarios, to assess the impact that the physician denying a DTC advertised medication requested by the patient has on the physician-patient relationship. The factors that were manipulated were whether the drug was used in a life-threatening situation or for life-enhancing purposes (e.g., Viagra), and whether the doctor granted the person's request for the medication or not. There were 346 participants (52% female, 58% male) with the mean age of 37.33. The results suggested that gender plays a role in the way that a person will react to being denied a medication they requested. For a life-threatening condition, male patients seemed to react more negatively to being denied the medication they requested, reported lower satisfaction with the visit, and showed lower adherence rates to the physician's recommendations. However, for life-enhancing medications, they did not react any differently than someone who was granted the medication. Females, on the other hand, reported that they would view the visit as a

failure and would be overall less satisfied with the visit if they were denied any medication request. Even though a woman would be less satisfied with the visit, denial of access to the requested medication did not lead to other negative reactions such as patient non-compliance or failure to return to the physician. This research suggests that physicians should focus more time explaining DTC advertised medication denials for life threatening medications to patients, especially male patients (Blose & Mack, 2009).

A survey of 1065 people (703 women, 362 men) revealed that the majority of people do not feel that discussing a medication they saw in an ad negatively affects their relationship with the physician (Allison-Ottey et al., 2003). The majority of people reported that, when they had discussed a medication they saw in an advertisement with their physician, the physician was happy to discuss it with them (46%), or discussed it in the same manner as another concern they had (46%) (Allison-Ottey et al., 2003). Overall physician-patient relationships seem to suffer no negative effects from DTCA.

There is a question as to whether gender, race, education, and/or age impacts the supported use of medication for treatment. There are mixed findings regarding this issue. Martinez and Lewis (2009) analyzed survey responses regarding demographics, general attitudes about DTCA, level of support for various depression and anxiety treatment methods, exposure to DTCA for antidepressants and antianxiety medications, and knowledge about these medications that was not gained from advertisements. The sample consisted of 402 participants who were recruited through a random-digit-dialing method. They found that there were no interaction effects of gender, race, education, or age of respondents and exposure to DTCA when predicting support of use for medication to treat depression and anxiety in youth (Martinez & Lewis, 2009). Another important

finding in the study is, although DTCA exposure does impact the likelihood that a person would endorse the use of medication to treat anxiety and depression, attitudes towards DTCA moderated the effects of ad exposure. If the person did not like or trust DTCA they were less likely to endorse the use of medication. This is an important implication that will be taken into account in this study. On the other side, Peyrot et al. (1998) found that factors such as gender, education, and race had significant effects on a consumer's medication knowledge and tendency to request medication, but found no effect of age on knowledge of medication and medication requests.

Depression and Young Adults

Depression is characterized by the feelings of sadness/depressed mood or loss of interest and pleasure in most activities (American Psychiatric Association, 2000). According to the DSM-IV-TR, the lifetime risk for major depressive disorder varies from 10% to 25% for women and 5% to 12% for men. Onset may begin at any age, but average onset occurs in the mid-twenties.

An, Jin, and Brown (2009) investigated DTCA and how it effects young adults' beliefs about depression. The participants were 285 undergraduate students from a large Midwestern university. They were given four vignettes and asked to respond to open-ended questions about depression as well as closed-ended questions about treatment options. The vignettes were of college students experiencing a range of stressors. Two vignettes described strong signs of depressions and the other two described typical college stressors with no major symptoms. To assess whether the participant had prior experience with depression they were asked, after reading one of the vignettes about a woman experiencing depression, if they have ever had emotional problems similar to

hers. To determine exposure to DTCA for antidepressant medications, the participants were asked if they recall ever seeing or hearing an advertisement for an antidepressant. Sixty-six percent of the participants recalled seeing or hearing an advertisement, but many of them were unable to describe what they remember or name any of the medications. After this they were exposed to a Cymbalta commercial and asked if they had seen the commercial before and on a scale of 1(seldom) to 5 (very frequently) how often they had seen it. The results indicated that high commercial exposure was associated with positive evaluation of antidepressant medications for students who have not had prior personal experience with depression. Among students without prior experience with depression, higher DTCA exposure was related to identifying depression cases as well as recommending antidepressants as the best treatment. Students with prior experience with depression were less likely to be influenced by the advertisements and this may be because students with prior experience may be more likely to search for more information. The impact of DTCA exposure on students found in this study raises some concerns. If young people are more likely to recommend using antidepressant medications so readily to someone else they may be more likely to use it themselves. DTCA could prompt a student suffering from typical college stressors to seek out medication when it may be inappropriate.

Frankenberger et al. (2004) found similar results in that participants who received pharmaceutical company information about depression, instead of a scientific article about depression, were more likely to endorse the use of antidepressants for themselves and their friends. This study also found that women who were given pharmaceutical advertisement information were more likely to rate themselves as being mild to

moderately depressed. This indicates that pharmaceutical advertising may be leading people to endorse more depressive symptoms. The majority of college students are exposed to pharmaceutical advertising and report that they pay attention to the advertising (Burak & Damico, 2000). This may increase endorsements of depression and increase antidepressant use among college students.

Pharmaceutical advertising and its impact on young adults is a very important area of research. There has been a lack of information on how DTCA impacts the decisions that young adults are making about treatments. There has also been a discrepancy in the literature as to whether gender, race, and education impacts a consumer's tendency to request medication.

The purpose of this study was to investigate the impact of pharmaceutical advertising on the participants' allocation of resources to treat depression. This study intended to shed light on college students perceptions about treatments for depressions and the impact DTCA has on their health care decisions. If DTCA increases the likelihood that a young adult will endorse the use of antidepressants to treat depression, then students in the treatment condition would have allocated more resources towards the use of antidepressants. A second purpose of this study was to determine if the relationship between exposure to anti-depressant medication advertisements and money allocated for the use of medication for the treatment of depression was mediated by attitudes towards DTCA in general. The third purpose of this study was to determine if DTCA exposure increased the likelihood that someone would rate themselves as mild to moderately depressed.

Hypotheses

The researcher hypothesized that participants who were exposed to a pharmaceutical advertisement would allocate more money for the use of antidepressants to treat a fictional character than participants who were not exposed to a pharmaceutical advertisement. Attitude toward antidepressant use was controlled for statistically. The second hypothesis examined whether the relationship between exposure to antidepressant medication advertisements and amount of monetary support for the use of medication for the treatment of depression was mediated by attitudes towards DTCA. The third hypothesis intended to explore the idea that participants who were exposed to pharmaceutical advertising would be more likely to rate themselves as being mild to moderately depressed. This idea was explored using women in Frankenberger et al. (2004), but was extended across gender in the current study.

CHAPTER III

METHODS

Participants

The participants consisted of 193 undergraduate students selected from the General Psychology subject pool at Indiana University of Pennsylvania. The participants were randomly assigned to groups. Participants included 102 females (52.8%) and 91 males (47.2%). Of the participants, 81.3% identified as Caucasian/European-American, 8.8% African American, 5.7% Asian/Pacific Island, 3.1% Multiracial, and 1% other. 68.9% of the participants were freshmen, 22.3% were sophomores, 5.7% were juniors, and 3.1% were seniors. The majority of the participants indicated that they were between the ages of 18-21 (91.7%).

Table 1

Demographic Data

	Frequency		Percent	
	Control	Experimental	Control	Experimental
Gender				
Male	43	48	48.3%	46.2%
Female	46	56	51.7%	53.8%
Year in College				
Freshman	63	70	70.8%	67.3%
Sophomore	18	25	20.2%	24.0%
Junior	4	7	4.5%	6.7%
Senior	4	2	4.5%	1.9%
Age				
18-21	82	96	92.1%	92.3%
22-25	7	5	7.9%	4.8%
26-29	0	1	0.0%	1.0%
30-35	0	2	0.0%	1.9%

Ethnicity				
Asian	3	8	3.4%	7.7%
Caucasian	72	85	80.9%	81.7%
African Am.	9	8	10.1%	7.7%
Multiracial	4	2	4.5%	1.9%
Other	1	1	1.1%	1.0%

Materials

The participants were given a survey and shown embedded videos online using the Qualtrics system. Qualtrics is online survey software which allows the user to collect and analyze data from online surveys created within the program. The online survey consisted of six primary parts: (a) items requesting demographic information (Appendix A), (b) a questionnaire to assess participant's prior beliefs and knowledge about prescription medications, personal and family history of depression, television viewing habits, and views about DTCA and herbal supplements (Appendix B), (c) instructions about viewing and links to video clips, (d) a vignette about treatment and allocation of money for therapy (Appendix C), (e) a questionnaire to assess beliefs about depression treatment (Appendix D), and (f) a measure of depression (Appendix E).

Measurement of Attitudes Toward DTCA

Attitudes towards DTCA were measured by 12 items adapted from a questionnaire used by Khanfar (2005). These questions intended to measure whether the participant believes that DTCA is beneficial. The questions were scored on a 5 point Likert scale (see Appendix B for items and scoring procedures). The participants were asked to indicate whether they strongly disagreed, disagreed, undecided, agreed, or strongly agreed with questions such as "TV prescription medication advertisements

improve consumer knowledge about medications" and "TV prescription medication ads empower consumers to play a greater role in medical decisions". The participant was forced to provide a response to each question before they were permitted to move ahead with the survey. According to Khanfar (2005), the Attitudes toward DTCA scale had good internal consistency with a Cronbach alpha coefficient of .82. In this current study the Cronbach alpha coefficient was .65. There was no particular item which reduced the value of alpha.

Measurement of Attitudes Toward Antidepressants

Attitude towards antidepressant use was measured by the Depression Treatments scale adapted from a questionnaire developed by Frankenberger et al. (2004). This scale intended to measure the participants' belief about the use of antidepressants for the treatment of depression (see Appendix D for items and scoring procedures). The questions were scored on a 5 point Likert scale. The participants were asked to indicate whether they strongly disagreed, disagreed, neutral, agreed, or strongly agreed with questions such as, "I believe that antidepressant medication is the only treatment for those suffering from depression" and "I believe that antidepressants are the best way to treat depression". The participant was forced to provide a response to each question before they were permitted to move ahead with the survey. Each participant received a single score for attitudes toward antidepressants obtained by summing the item responses. In this current study the Cronbach alpha coefficient for the attitudes toward antidepressant scale was .78.

Measurement of Current Level of Depression

Current level of depression was measured using the Center for Epidemiological Studies Depression Scale (CES-D). The CES-D is a short self-report scale designed to measure depressive symptoms in the general population (see Appendix E for items and scoring procedures). The CES-D is a measure available on public domain. The items on the scale are symptoms associated with depression. These items have been used in previously validated, longer scales. Previous research found that the CES-D has a Cronbach alpha coefficient of .85 (Radloff, 1977). In this current study the Cronbach alpha coefficient was .75. The CES-D asks participants to rate each item, e.g. "I felt depressed" and "I could not get going", on a four-point scale (0 rarely or none of the time) to (3 most or all of the time). The participants were required to respond to each question on the CES-D before they were able to move on to the next part of the survey.

Videos

Participants were shown a series of videos on depression with a basic information about depression piece (2 minutes, 24 seconds), a piece on psychotherapy for depression (2 minutes, 52 seconds), a video about various pharmacological treatments for depression (2 minutes, 9 seconds), a section on herbal treatment for depression (1 minute, 41 seconds), and an advertisement for a seasonal allergy medication, for masking purposes (32 seconds). The treatment group was also shown a pharmaceutical advertisement for depression medication (1 minute, 16 seconds). The Control group version contained the same video clips with the pharmaceutical advertisement removed and replaced with a public service announcement about depression (1 minute, 3 seconds). The advertisement and public service announcement were chosen because they both use negative and

positive emotional appeals. The videos were shown in random order to counterbalance and control for order effect. There were timers attached to the videos to ensure participants did not skip the videos.

All the videos were obtained online. The informative video about depression, the video on psychotherapy for depression, the video about various pharmacological treatments for depression, and the section on herbal treatment for depression were chosen to provide the subjects with information about depression and treatments for depression. This controlled for the participants knowledge base about depression. The informative video discussed the symptoms, causes, and treatments of depression. The video was found at http://www.youtube.com/watch?v=3JMYWiAaiQs. This video was chosen for its educational content about college students dealing with depression.

The video about psychotherapy described therapy, the benefits of therapy, and how to find a therapist. This video was chosen for its informative value about psychotherapy, which helped control for the participant's knowledge about psychotherapy for depression.

The video was found at http://www.youtube.com/watch?v=6uMHvHCKNo0.

The video about pharmacological treatment was created by the Journal of the American Medical Association and discussed the effect of antidepressants on varying severity levels of depression. This video was chosen because it only discussed antidepressant use in clinical terms and did not mention a medication by name which may have influenced the participants or could have been interpreted as a commercial. The video was found at http://www.youtube.com/watch?v=h7eIDAX5_ec.

The herbal treatment for depression video discussed using St John's Wort, alternative medicine, and supplements to help with mild to moderate depression. This video was chosen to help participants to identify what herbal remedies for depression entail. This would allow the participant to be informed about the various treatments offered after the vignette. The video was found at http://www.youtube.com/watch?v=cqww7YFZptw.

The advertisement for Cymbalta, seen by the treatment group, was chosen because it employed negative and positive emotional appeals. The advertisement shows people talking about their depression symptoms then shows snapshot videos of what their life could be like without depression while discussing Cymbalta. The advertisement was found at http://www.youtube.com/watch?v=7d6Ra0n2pUA. The public service announcement shows a man describing his depressive symptoms and how he would like to feel. The PSA also used similar amount of positive and negative emotional appeals as the Cymbalta advertisement. The public service announcement was found at http://www.youtube.com/watch?v=ZnXOTa-z-gM. The advertisement for Claritin, a seasonal allergy medication, was only included for masking purposes. This advertisement was found at http://www.youtube.com/watch?v=TfvaTwdLSgs.

Procedures

The participants were randomly selected for participation from the General Psychology subject pool at Indiana University of Pennsylvania. Participants were randomly assigned to one of two groups. The participants received an email with instructions about how to participate in the study, the time requirement for participation, the date to respond by, and a link to participate (see Appendix F). This email was sent

through the Qualtrics survey system. If the person had not participated by the date requested they were sent a reminder email. Reminder emails were sent out two times before the survey was closed to participants. Reminder emails had the same content as the original invite except the date for completion was changed.

When the participant clicked on the link they were directed to the Qualtircs survey. First they were directed to read and electronically sign a consent form (see Appendix G). If they indicated that they did not want to participate they were asked to please close their browser at that time. If the participant wished to continue they were directed to click on a box indicating their consent before the next page button would appear.

The first part of the online survey collected demographic data, knowledge of DTCA, attitudes towards DTCA, history of depression, family history of depression, television viewing time, and, in order to mask the intent of the study, knowledge about herbal remedies and advertisements about herbal remedies. After the completion of that section the participants were then shown 6 videos, which were embedded into the Qualtrics survey. Before the videos were shown these instructions appeared on the screen, "In the next section you will be shown a series of videos. Please make sure your audio is turned on. Pay attention to the videos because you will be asked questions about them later. You will be shown six short videos. You must watch all videos to get credit for participation in this study! Press play on the video when you are ready to watch and use the next button on the bottom of the page to advance once the video has ended". When the participant clicked the next button the video automatically began. If the data indicated the participant had not played the videos for the appropriate amount of time

they were asked to redo the whole survey. Emails were sent daily to participants who did not watch the videos entirely (appendix H). In group 1, six people were asked to retake the survey and in group 2, two people were asked to retake the survey. When the email was sent out to redo the survey the participants previous results were deleted from the data set, so they were not counted twice.

After watching the videos the participants were then given a task in which they were asked to allocate $500 among a variety of strategies to treat the depression of a fictional character in a vignette. After reading the vignette, participants in both groups were asked to allocate the $500 towards the treatment option(s) from which they feel this person would benefit (see Appendix C). The participants had herbal remedies, anti-depressant medication, and psychotherapy as options. The survey was set to allow the participant to move forward when the total money allocated had added up to $500. If the participant did not use the full $500 the next page button would not appear. They were instructed that they must spend the full $500.

When the participant completed the vignette and money allocation they were asked to respond to a survey about treatment for depression and complete the CES-D. The participants were required to respond to each question before completing the study. Depression is a sensitive topic, therefore, at the end of their participation each participant received an information packet about the symptoms of depression, treatments for depression, and information about where they can seek help if they or someone they know is suffering from depression (see Appendix I). This information was sent to the participant, by email, as soon as they completed the survey. When the study was

completed data was transferred from the Qualtrics website to SPSS for analysis. Participants were assigned subject numbers when the data was converted into SPSS and all email addresses were removed from the data in order to keep responses anonymous.

CHAPTER IV

RESULTS

Descriptive Statistics

Table 2 shows the means, standard deviations, skew, and kurtosis for each group and the total sample. Personal history of depression and family history of depression were measured by a single item as was television viewing. Personal history of depression and family history of depression were measured dichotomously. Television viewing was a categorical variable and the participants were given four time range choices. In both groups, personal history of depression, family history of depression, television viewing, CES-D and money allocated for medication were positively skewed to approximately the same degree. The positive skew is a reflection of the relatively few individuals who reported either a personal or familial history of depression as well as a tendency for only a few individuals to allocate very large sums of money to medication. The other departures from normality were in the kurtosis of the group distributions. In the experimental group personal history of depression, television viewing, and CES-D were leptokurtic. In the control group personal history of depression and CES-D were leptokurtic. The combination of both groups was found to be leptokurtic for personal history of depression. The departure from normal kurtosis was not extreme for the continuous variables and in the case of the other variables simply reflected the categorical nature of the measures.

Table 2

Means

	Experimental				Control				Total			
	Mean	(SD)	Skew	Kurtosis	Mean	(SD)	Skew	Kurtosis	Mean	(SD)	Skew	Kurtosis
PH Dep	.13	(.33)	2.30	3.36	.11	(.32)	2.50	4.33	.12	(.33)	2.37	3.65
FH Dep	.24	(.43)	1.23	-.49	.26	(.44)	1.12	-.76	.25	(.43)	1.17	-.63
TV View	1.63	(.83)	1.30	1.22	1.82	(.87)	.87	-.03	1.72	(.86)	1.08	.47
DA Att	37.51	(4.90)	-0.17	0.38	36.97	(5.27)	-.07	-.55	37.26	(5.07)	-.13	-.14
Med Att.	24.22	(7.23)	-0.05	-.80	23.12	(6.91)	.13	-.63	23.72	(7.09)	.04	-.75
CES-D	14.15	(9.31)	.62	-.40	15.06	(8.76)	1.08	1.18	14.57	(9.05)	.79	.23
$ meds	140.53	(106.31)	.72	.98	129.90	(95.6)	.33	-.73	131.48	(101.72)	.59	.47

Note: PH Dep= Personal history of depression; FH Dep= Family history of depression; TV view= television viewing; DA ATT= DTCA attitudes; Med Att.= Attitudes toward antidepressants; $ med= money allocated towards medication

A series of tests were conducted to see whether the two groups differed on any of the potential control variables as a way of assessing the equivalence of the groups. A Chi-square test for independence was conducted (with Yates Continuity Correction) and indicated no significant association between group and personal history of depression, X^2 (1, n = 193) = .002, p = .96, phi = -.02. A Chi-square test for independence was also conducted to determine association between group and family history of depression. The results indicated no significant association between group and family history of depression, X^2 (1, n = 193) = .015, p = .90, phi = .02. A Chi-square test indicated no significant association between group and television viewing, X^2 (3, n = 193) = 3.22, p =.36, phi = .36. An independent sample t-test was used to compare attitudes toward DTCA and group. There was no significant difference found between the experimental group (M = 37.51, SD = 4.90) and the control group, M = 36.97, SD = 5.27; t (190) = .73, p = .46. The magnitude in the difference in means (mean difference = .54, 95% CI: -.91 to 1.99) was very small (eta squared = .005). An independent samples t-test was run to compare attitudes towards antidepressants for the two groups. There was no significant difference between the experimental (M = 24.22, SD = 7.23) and control group (M = 23.12, SD 6.91; t(191) = 1.07, p = .29). Groups were also compared for the CES-D scores through the use of an independent samples t-test. There was no significant difference found between the experimental (M = 14.15, SD = 9.31) and control group (M = 15.05, SD = 8.76; t(191) = -.69, p =.49). These results suggest that the two groups were essentially equivalent with respect to depression symptoms and history, attitudes toward advertising and antidepressant medication, and time spent watching television.

An initial test of the impact of viewing the antidepressant medication advertisement was conducted with an independent samples t-test that compared the groups on the amount of money allocated after viewing the videos. Again there was no significant difference in scores between the experimental (M=104.53, SD=106.31) and control group (M=129.90, SD=95.60); t(191)= 1.34, p=.18). Without controlling for other variables, then, there appeared to be no effect of the different videos the participants watched. In order to evaluate what variables could be controlled and thus provide a more sensitive test, the correlations among the measures were evaluated.

Table 3 shows the within group correlations for all the measures. The pattern of correlations among the various measures was quite similar in the two groups. As one would expect, there was a correlation between personal and family history of depression for both groups (r = .52 for the experimental group and .33 for the control group). However, the correlation between report of personal depression and scores on the CES-D was relatively low (r = .27 and -.05 for the experimental and control groups respectively). There was a large correlation between money allocated towards antidepressants and attitudes towards antidepressants in both groups (r =.51 for the experimental group and r = .50 for the control group). The largest difference found between the two groups was in the correlation between CES-D scores and attitudes toward DTCA (r = -.43 for the control group and r = .01 for the experimental group). The only measure that was used as a covariate was attitudes towards antidepressants, as this was the only variable which had a high correlation for both groups with money allocated towards medication.

Table 3

Within Group Correlations

	1	2	3	4	5	6	7
1. Pers. His. Dep.	--	**.33**	-.07	.04	.08	**.24**	-.05
2. Fam. His. Dep.	**.52**	--	-.08	-.17	-.03	.10	-.02
3. TV Viewing	-.09	-.17	--	**.19**	.08	.11	.12
4. DCTA Attitude	-.05	-.06	.07	--	.15	.01	.13
5. Antidep. Attitude	.14	.09	.05	**.26**	--	**.34**	**.51**
6. CESD	.27	**.26**	.00	-.43	.17	--	.09
7. $ for Meds	**.24**	.13	.05	.19	**.50**	.11	--

Note: Correlations above the main diagonal are for the experimental group, correlations below the diagonal are for the control group. Significant correlations ($p < .05$)are indicated by bold print.

ANCOVA

It was determined appropriate to use a one-way between-groups analysis of covariance (ANCOVA) to determine if some of the variations in the dependent variable scores are caused by the effect of another continuous variable (covariate). The use of ANCOVA removed this variation from the error or random variance, resulting in increased sensitivity of the test for treatment effects. The one-way between-groups ANCOVA was used to test the hypothesis that exposure to the pharmaceutical advertisement would be positively associated with increased monetary allocation for the

use of antidepressants to treat depression. The independent variable was the video the participant watched (advertisement or PSA) and the dependent variable was the amount of money the participant allocated towards medication for the treatment of depression. Attitude towards antidepressants was used as a covariate.

Preliminary checks were completed to ensure there was no violation in the assumptions of homogeneity of variance, normality, homogeneity of regression of slopes, and reliability measure of the covariate. There was no significant difference between the two groups for allocation of money to depression medication after adjusting for attitudes towards antidepressants, $F(1, 190) = .82$, $p = .37$, partial eta squared = .004. There was a strong positive relationship between attitudes toward antidepressants and money allocated towards depression medication, as indicated by a partial eta squared value of .28 and the zero order correlations previously mentioned. Participants with a positive attitude about antidepressants were more likely to allocate more money towards antidepressants.

Hierarchical Multiple Regression

Hierarchical multiple regression was used to assess the ability of the group to predict the allocation of money for the use of antidepressants, after controlling for the participants attitude toward direct to consumer advertising. Preliminary analyses were completed to determine that there were no violations in the assumptions of normality, multicollinearity, homoscedasticity, and linearity. Results indicated that there was no correlation between group membership and amount of money allocated to antidepressants. Attitudes toward DTCA were entered at step 1 which explains 2% of the variance in allocation of money. After entering the group (video watched) at step 2 the

total variance explained by the model as a whole was 3%, F(2,189)= 2.66, p>.05. Group explained an additional .8% of the variance in money allocation after controlling for attitudes towards DTCA, R squared change= .008, F change (1, 189) = 1.545, p>.05. The ANOVA (table 7) indicates that the model as a whole is not significant F(2, 189)= 2.66, p > .05. Since there was no correlation found between the money allocated for medication and the group, attitudes toward DTCA could not be considered as a mediator. However, it was found that attitude toward DTCA was related to allocation of money for medication ($p \leq .05$). This indicates that participants with positive attitudes towards DTCA were likely to allocate more money towards the use of antidepressants regardless of group.

Table 4

Model Summary

	R Square	R Square Change	F Change	p	F	Sig
Model 1	.019	.019	3.76	.05	3.76	.05
Model 2	.027	.008	1.55	.215	2.66	.07

a. Predictors: (constant), Attitudes towards DTCA
b. Predictors: (constant), attitudes toward DTCA, Group

t-test

Based on the results presented in the descriptive statistics there appeared to be no significant difference found between group and current level of depression. Experimental group (M = 14.15, SD = 9.31) and control group (M = 15.05, SD = 8.76; t(191) = -.69, p = .49). Participants who were exposed to pharmaceutical advertising were not more likely to rate themselves as being mild to moderately depressed.

CHAPTER V

DISCUSSION

This study was conducted to help determine the impact of pharmaceutical advertising on choices a person makes for treatment of depression. The hypotheses in this study were not supported, but positive attitudes toward DTCA and antidepressants atwere found to increase allocation of money to antidepressants. The first hypothesis in this study was participants exposed to pharmaceutical advertising would allocate more money towards antidepressants when treating depression. This hypothesis yielded no significant results, indicating that pharmaceutical advertising may not impact college students' decision to allocate more money for medication when treating depression. Failure to detect significant differences between groups was unexpected as previous research found that DTCA does impact the likelihood that a person would endorse the use of medication to treat depression (Martinez & Lewis, 2009; Frankenberger et al., 2004; An et al., 2009). The second hypothesis was that the relationship between group and amount of money allocated towards antidepressants would be mediated by attitudes towards DTCA. The findings indicated that there was no relationship between group and money allocated towards antidepressants, therefore attitudes towards DTCA could not be used as a mediator. However the findings did indicate that positive attitudes towards DTCA increased allocation of money towards antidepressants. The third hypothesis explored the idea that participants who were exposed to pharmaceutical advertising would be more likely to rate themselves as mild to moderately depressed. There was no relationship found between group and depression ratings indicating that participants exposed to

pharmaceutical advertising were no more likely to rate themselves as mild to moderately depressed.

Frankenberger et al. found that participants who received pharmaceutical company information about depression were more likely to endorse the use of antidepressants (2004). These findings were opposite of what this study found. This difference may be explained by sample size and gender. Frankenberger et al. had a sample size of 44 participants. Thirty-one participants were women. The study only collected data from thirteen men, which was not a large enough sample to allow them to include the men in the findings. This indicates a threat to external validity as the results cannot be generalized to men. The sample size for the current study was much larger than the sample used by Frankenberger et al. A small sample size can represent a threat to external validity and increases the likelihood of having a sampling bias.

The other difference in this study is the medium in which the advertisement was presented. Frankenberger et al. presented their advertisement in a written format and the current study presented a televised advertisement. A study completed by Avery, Eisenberg, and Kosali (2012) comparing the impact of print and television advertising on antidepressant use, found that women were significantly impacted by both print and television advertisements and men were only impacted by television advertising. Frankenberger et al. used only females in their sample and also used print advertising, which impacts women more than men. These findings indicate that their results may have been biased.

A study done by An et al. (2009) found that students with higher exposure to DTCA were more likely to endorse the use of antidepressants. The current study found

opposite results indicating that students exposed to DTCA did not allocate more money towards antidepressants. An et al. (2009) used previous exposure to pharmaceutical advertising rather than exposure occurring during the study. Participants were asked if they recalled hearing or seeing an advertisement for an antidepressant in the last month, what the medication was, and to describe the advertisement. The participants were also shown a popular Cymbalta advertisement and asked how often they had seen the advertisement. Previous exposure to DTCA was not controlled for as readily in the current study and was only measured by the amount of television the person viewed on an average week. The difference in the measurement of DTCA viewing prior to participation may account for the difference found between these two studies.

Martinez and Lewis (2009) also found that DTCA exposure plays a role in the use of antidepressants for the treatment of depression. This study did not focus on college age students, with only 18% of their participants being age 18-29. They found that people 60 and older were three times more likely to support the use of antidepressants. They believed this may be due to the increased tendency of older people to use medications. The sample in the current study included participants in the age range of 18-35 and therefore excluded participants that show an increased tendency to endorse medication usage. The sample was chosen to determine if pharmaceutical advertising made an impact on a younger generation. The impact of DTCA may be affected by historical factors such as the back box warning and the beginning of pharmaceutical advertising; therefore it may be beneficial to include other age groups in further studies to determine if there is a difference between cohorts.

Avery et al. (2012) found that exposure to low or high levels of DTCA, relative to no exposure to advertising leads to a 3 to 10% increase in the use of antidepressants. Their sample consisted of participants recruited through a nationally representative commercial marketing survey. In their study 66% of females and 59% of males with depression took antidepressants within the last 12 months. Ad exposure was measured by using Kantar/TNS medica intelligence data which identifies exact time and program during which DTCA for antidepressants occurred. The participants were asked to identify from a list, what programs they watch and the time they usually watch the program. This allowed the researchers to identify how many advertisements the participant has been exposed to. People who identified that they have had depression in the last 12 months were asked if they have taken medication in that time. The data was used to determine if exposure to DTCA for depression medication increased the likelyhood of the person talking antidepressant medication. Use of this superior method for gauging exposure to antidepressant DTCA may have helped make the current study stronger by allowing prior exposure to be taken into accurate account. This may indicate that prior exposure is an important variable that needs to be considered more extensively in future research.

While this study yielded no significant results in DTCA exposure increasing the endorsement of antidepressant use there was a strong positive relationship detected between attitudes toward antidepressants and money allocated towards depression medication. This indicates that previous attitudes towards antidepressant use may play a large role in decision making. The theory of reasoned action states that attitudes influence behavioral intentions which then influence a person's behavior (Ajzen, I., & Fishbein, M., 1980). There appears to be very little research looking at previous attitudes towards

antidepressants and how they affect treatment choices. This is an important implication, as we see from previous research; attitudes predict a variety of behaviors from physician prescription behaviors (Sable et al., 2006) to the decision to donate organs (Jeffres et al., 2008). It is important that attitudes towards antidepressants be explored more extensively in future research to determine how a person develops their attitude and how their attitude affects their treatment choice.

Hypothesis 2 intended to explore the idea that the relationship between group and amount of money allocated towards antidepressants would be mediated by attitudes towards DTCA. It was found that attitudes towards DTCA could not be used as a mediator because there appears to be no relationship between the money allocated for medication and treatment group (video or PSA). However, the data did uncover a relationship between attitudes towards DTCA and allocation of money for depression. Participants with a positive attitude towards DTCA allocated more money towards the use of antidepressants. This result confirms those of a previous study completed by Dieringer, Kukkamma, Somes, and Shorr (2011) which found that a positive attitude towards DTCA increases responsiveness to DTCA, as well as a study done by Martinez and Lewis (2009) which found that if a person distrusts DTCA they were less likely to endorse the use of medication. This relationship is consistent with reactance theory. This theory states that, when a person feels that their freedom is threatened they will exhibit opposition to restore that sense of freedom (Brehm, 1966). In the context of this theory a person who distrusts DTCA and feels that ads are misleading will be less likely to endorse the use of medication. They will be more likely to exhibit opposition and choose something other than medication for treatment. People who trust DTCA will not feel the

need to exhibit opposition and are more likely to endorse the use of medication. This relationship should be continued to be explored in further research by looking at how people rate DTCA and how this affects their treatment choices.

The third hypothesis explored by this study did not find that participants who were exposed to pharmaceutical advertising rated themselves as being mild to moderately depressed more frequently than people who were exposed to a public service announcement. This finding differed from previous research by Frankenberger et al. (2004). That study found that women exposed to pharmaceutical advertising are more likely to rate themselves as mild to moderately depressed. Frankenberger et al. used a very small sample size of 44 participant and 31 of those participants were women. The lifetime risk for depression is higher for women than men, 10% to 25% for women and 5% to 12% for men (APA, 2000). Frankenberger et al. were only able to include women in their study because the number of male participants was insufficient for data analysis. Based on the higher prevalence of depression in women, the exclusion of men may have biased their results. This small sample size and exclusion of men from the data may not be an accurate representation of the population being studied. The current study has a much larger more diverse sample of college students. When the data was analyzed using exclusively women the findings indicated that women who were exposed to pharmaceutical advertising were just as likely to rate themselves as mild to moderately depressed as women exposed to the PSA. This indicates that previous findings in Frankenberger et al. may be biased, while the findings in this study may be more accurate.

Another important area of research related to pharmaceutical advertising is to investigate the impact pharmaceutical advertising has on promoting discussions about medications with a physician. The current study found that people with positive attitudes towards DTCA are more likely to endorse the use of medication. These people may be more likely then to seek out a physician to write a prescription. Bell, Taylor, and Kravitz (2010) found that people with depression are influenced by DTCA and it encourages them to talk with their physician. Bell et al. (2010) recruited 148 participants from an online depression forum for their study. The participants were given a survey which asked about attitudes towards antidepressants, actions taken after seeing an advertisement, and perceived quality of the information. Nearly 40% of the participants stated that the advertising promoted a discussion between them and their physician about the medication. They also found that participants who rated the advertisements as positive were more likely to have acted upon seeing the advertisement. This indicated that DTCA may be helping people to discuss issues with their physician, but the discussions were more likely to be about medication rather than depression itself. The implications of this current study combined with the study by Bell et al. provide evidence that attitudes toward DTCA may be impacting the decisions people make about treatment for depression, which include seeking medication from a physician.

Although this study provides evidence that attitudes towards DTCA and attitudes toward the use of antidepressants affects decisions regarding the use of medication, it is not without limitations. This study used online data collection, which is a quick way to collect data from participants and allows the participant to complete the survey at their own speed, on their own time. While this method of data collection may be a quick way

to gather information there are some reported disadvantages to this method of data collection. Some of the disadvantages are the participant may not take the time to respond to the questions appropriately (rush through questions), may have difficulty understanding the questions, may misrepresent themselves, or another person may respond to the questions rather than the intended participant (Hunter, 2012). When using online surveys it is difficult if not impossible to control for these variables as you would be able to in a laboratory setting. Using online data collection may have impacted the internal validity of the study.

The participants were encouraged to watch the videos, informed there were timers attached to the videos, told they would be asked questions about the videos following the viewing, and sent emails to redo the survey if they videos were not viewed. Six participants from the experimental group were asked to redo the survey and two people from the control group were asked to redo the survey. This does not mean that the participant was paying attention to the video when it was playing or was even watching the video. The participants completed the survey on their own time therefore it was impossible to control for their attention to the video. While there is no direct evidence that the participant was not watching the video, there may be inaccurate data included due to this variable. This could explain discrepancies between previous research reporting DTCA viewing is associated with increased antidepressant usage and this study's finding that DTCA did not increase the participant's allocation of money towards antidepressant usage. While this study attempted to control for participants watching the videos by including the statements "In the next section you will be shown a series of videos. Please make sure your audio is turned on. Pay attention to the videos because you will be asked

questions about them later. You will be shown six short videos. You must watch all videos to get credit for participation in this study! Press play on the video when you are ready to watch and use the next button on the bottom of the page to advance once the video has ended" prior to the videos, no questions regarding the video content were given after the conclusion of the videos. Future research should include questions about the video the respondent must answer correctly to continue with the survey to better control for attention and/or not use an online method of data collection to ensure the participant is paying attention to the video.

This study looked at a student population. This population is included in the black box warning for antidepressants, therefore it is important to determine if they are affected by pharmaceutical advertising for antidepressants which may increase antidepressant use. While it was important to study this population, excluding other ages may have limited ability to apply these findings to the general population. The vast majority of the participants were between the ages of 18-21 (91.7%). Martinez and Lewis (2009) found that people 60 and older were three times more likely to support the use of antidepressants as compared to people in lower age groups. Further research may want to include other age groups to control for historical factors and increase external validity.

Another consideration with a younger population is generational differences. Changes in the laws in 1997 made pharmaceutical advertising on television more prevalent. Many of the participants (92%) were born between the years 1990 & 1993 and therefore may not remember a time before televised pharmaceutical advertising. Older populations may be impacted by pharmaceutical advertising on television differently since they may remember when pharmaceutical advertising was not on television. Since

the current study looked at a younger population it may have affected the results regarding support towards antidepressant use.

Another important historical factor to consider, which may impact findings, is the black box warning issued for antidepressant use in adolescents and teens. The black box warning for adolescents was issued in 2004 and it was updated to include young adults ages 18-24 in 2007. The majority of the participants were ages 10- 17 when the black box warning was initially issued. The participants may have been discouraged from using antidepressants if they were dealing with depression at this time, which may impact their current views about antidepressant use. This study did look at knowledge of the black box warning and if it impacted money allocation for antidepressants and no difference was found. It is difficult to determine if knowledge of the black box warning would impact older adults and their views about antidepressants, as this study only included young adults. Further research is needed to determine the extent of the impact of the black box warning across various age groups.

All participants were in college, but a sizable majority of the participants were freshman (68.9%). Previous research has indicated that factors such as gender, education, and race had significant effects on consumers' medication knowledge and tendency to request medication (Peyrot et al., 1998). It was found previously that higher-educated people were more likely to request specific medications and this may be because education empowers people to approach their physician (Peyrot et al., 1998). A younger student may not have the same critical thinking skills as a student further in their education. Increased critical thinking skills may allow the person to feel more empowered to make different healthcare choices. The students included in this research

were from an introduction to psychology class and they may have been exposed to more information about depression than typical individuals in this age range. Since all the participants were at a minimum in their freshman year of college and were all in an introductory psychology class they may not constitute a representative sample of the population and the study's results should not be generalized to a normative population sample.

This study was unique in the fact that a vignette was used, but this also leads to a limitation of the study. Vignettes are easy to use it is difficult to generate life-like emotions using a vignette (Collett & Childs, 2010). There has been very little research on vignettes and the research that has been completed indicated mixed reviews about using vignettes in research. It is very difficult to make people feel like they are in a real life situation when a vignette is used(Collett & Childs, 2010). A vignette was used in this study to allow the student to understand what the person in the vignette was experiencing rather than just stating that the person has depression. While the vignette gave the participant knowledge about the person and allowed them to diagnose the person with depression it could have been interpreted different ways by, different participants affecting the way they allocated their money to various treatments. The vignette and the way the participant interpreted the vignette could have impacted the participant, but was likely controlled because the same vignette was used in both conditions.

Depression is a widely known mental illness. Many people have had experience with depression or have knowledge about the illness, medication, and psychotherapy. While the study attempted to control for prior experience with depression it is much more difficult to control for prior knowledge about the condition. The students

in this study were from an introductory psychology class, but may have been in various majors. This unaccounted for influence may have impacted the choices the students made when allocating their resources. For example a student majoring in psychology may have had other psychology classes and had prior knowledge of depression and treatments for depression, whereas a music major may have only had this one psychology class and not been exposed to depression or treatments for depression previously. Someone with prior knowledge about depression and depression treatments may have been less influenced by the advertisement.

Single video manipulation may not have been enough to change attitudes towards a very well known class of medications and a very well known disease. This study may have been improved by creating an artificial disease state. This would control for prior attitudes about the disease and medications.

The study also did not control for how many advertisements the participants may have been exposed to previously. While the study did account for how much time the participants spent watching television, the type of television programs and their viewing times were not accounted for. A study done by Avery et al. (2012) took into account when participants usually watched television and used information from Kantar/TNS Media intelligence to determine the exact time and program during which the DTC antidepressant ads were aired. They were then able to determine the respondent's potential exposure to DTC antidepressant television ads. This current study lacked the ability to fully assess the impact previous DTC advertisement viewing had on the results. This study attempted to control for exposure to advertisements by using a single video manipulation during the study. The advertisement used was chosen because it used

similar negative and positive emotional appeals as the PSA. The single video manipulation used in this study may not have been enough to change previous attitudes based on prior exposure. While attitudes do not always determine how a person will behave it is a good indicator about the decisions a person will make. This study is unique in the idea of using a single video manipulation as previous DTCA research primarily focuses on prior exposure to advertisements. Taking these issues into account in future studies would help to provide a more definitive explanation of how pharmaceutical advertising impacts the decision people make regarding treatment of various conditions.

The money allocation used in this study was an adaptation of a choice task, commonly used in marketing research studies to assess buyer preferences. The money allocation choice was a forced choice as the participants were forced to spend their $500 on medication, therapy, and/or herbal remedies. They had to choose from these three categories and were forced to spend the entire amount of money. There are benefits and consequences when using the forced choice method. One of the benefits of using forced choice is that it can provide an accurate prediction of purchase decisions in cases when the consumer would be forced to make a choice in real world situations (Dhar & Simonson, 2003).

Previous research has found that forced choice procedures can often produce findings that are incomplete or biased if consumers are not given enough choices (Dhar & Simonson, 2003). A consumer who is forced to choose may select a specific option because of their preferred attribute values or because the option offers a way to resolve choice conflict when the participant is uncertain. Offering a no choice option may help to control for these possibly biased findings (Dhar & Simonson, 2003). The current study

did not offer a "no treatment" option for participants. This may have made the participant feel forced into making a decision when in reality they would not choose to treat depression with any of the offered options. The study could have included a no treatment option within the choices or asked participants after completing the money allocation if they would have preferred to have no treatment or different treatment rather than the options offered.

The money allocation as a dependent variable, in this study, gave the participant 3 options for treatment (psychotherapy, antidepressant medication, and/or herbal remedies). It has been long thought that a variety of choices is better for the consumer than limited choices when they are making decisions (Chernev, 2003). Recent research has begun to find that if consumers are offered too many choices it may lead to choice deferral. One study found that at least one online grocery store found that by decreasing the assortment of their product by 20% to 80% across different product categories their revenues increase by 11% (Boatwright & Nunes, 2001). A study done by Gourville & Soman (2005) coined the term "overchoice" and indicated that this can lead to an increase in regret faced by the consumer. They report that this can be reduced by simplifying the information provided and allowing the participant to reverse their choice. In the current study the effects of "overchoice" were not an issue since the participants only had three treatment options. Further research should be cautious about giving participants too many treatment options as this could result in "overchoice" effects. "Overchoice" effects can be reduced in these circumstances by allowing the participant to respond to a question after the money allocation indicating whether they would still chose the above treatment

methods if they were also offered a “no treatment” option. This option would allow the participant to feel like they could reverse their choice.

Participants were asked an open ended question of, “If you were depressed what treatment would you use?”, which they had to complete, after finishing the money allocation. This allowed insight into options that were not included in the money allocation which the participant would prefer, such as acupuncture, exercise, or no treatment. Other options that may want to be included in future research are combination therapy or listing different medication options. There were treatments excluded from the money allocation choices which were preferred by participants. This could have skewed the results because the participant was not presented with enough choices to reduce choice conflict if their preferred method of treatment was not available.

This research supports and expands current knowledge regarding pharmaceutical advertising and the impact it has on medical decisions. While it was not a principle hypothesis of this study, attitudes towards DTCA do appear to be related to allocation of money for medication. Also attitudes towards antidepressants appear to impact the decision to use medication to treat depression. Further research in this area should be considered as attitudes may impact the person’s behavior, but attitudes are likely formed over multiple exposures to DTCA rather than in a single manipulation. Based on this the impact of advertisement may not have been adequately assessed in this study.

To improve this study prior exposure to DTCA would be assessed in depth. Included would be more questions regarding television viewing habits of participants such as what time they are likely to watch television, what shows they normally watch, as well measure to gauge their exposure in the last 30 days. Prior exposure to DTCA could

be impacting the participant's attitudes and this should be controlled or studied in a more extensive manner.

While also not a focus of this study, another area that merits further investigation is the impact DTCA has on physician-patient relationships. Such studies may also want to focus on psychologist-client relationships especially in states where the psychologist has prescribing rights or in facilities where the psychologist has to refer the client for medication. This may prove influential as progressively more states discuss prescription privileges for psychologists.

Pharmaceutical advertising is an important and expanding research subject. As DTCA increases in prevalence so do the various impacts it has on consumers. While DTCA may have positive benefits such as alerting people to new medications on the market and increasing awareness of certain disease states, there may also be negative impacts. Ongoing research is needed to continue investigating whether the negative impacts outweigh the benefits and if public policy should be changed.

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Appendix A

Demographic Information

Please provide the following demographic information

1. Gender

    1) Male
    2) Female

2. I feel that my health is_____ compared to others my age

    1) Excellent
    2) Very Good
    3) Good
    4) Fair
    5) Poor

3. Year in college

    1) Freshman
    2) Sophomore
    3) Junior
    4) Senior

4. Age

    1) Below 18
    2) 18-21
    3) 22-25
    4) 26-29
    5) 30-35
    6) 36 or older

5. How would you classify yourself?

    1) Asian/Pacific Islander
    2) Caucasian/White
    3) African American
    4) Hispanic
    5) Multiracial
    6) Other: _____

Appendix B

Pharmaceutical Advertising Survey

Questions 5-8 and 13-15 were positively scored questions 9-12 and 16 were reverse scored. The scores were then totaled for each participant. s 5-8 and 13-15 were positively scored questions 9-12 and 16 were reverse scored. The scores were then totaled for each participant to get their attitudes towards advertising score. Questions 1-4, 17-24, and 28-37 in Appendix B were not analyzed in this study and were included to mask the purpose of the study.

Please read each question carefully and indicate the answer that best describes you.

1. How many prescription medications have you seen advertised on TV during the past week?
    1) 0-3
    2) 4-6
    3) 7-10
    4) 11 or more

2. Other than birth control are you taking any prescription medications? **(Select only one).**

    1) I do not take any prescription medications
    2) I am currently taking prescription medication I saw on a television advertisement
    3) I am currently taking a prescription medication I have not seen advertised on TV.

3. After watching an advertisement for a prescription medication, have you ever? **(Select all that apply)**

    1) Called a toll-free telephone number shown during the advertisement
    2) Accessed a website advertised
    3) Looked for a print advertisement for the same medication
    4) Talked with your doctor about the medication
    5) Talked with your pharmacist about the medication
    6) None

4. Which one of the following would you do <u>first?</u> **(Select only one).**

1) Call the toll-free telephone number shown during the ad
2) Access the website advertised
3) Look for a print ad for the same medication
4) Talk with your doctor about the medication
5) Consult with your pharmacist about the medication
6) None

Please indicate your response to the following statement by circling the corresponding letter.

SD= Strongly Disagree D= Disagree U= Undecided A= Agree SA= Strongly Agree

5.	Prescription medication ads empower consumers to play a greater role in medical decisions.	SD	D	U	A	SA
6.	Medication ads encourage consumers to discuss health related issues with their physician.	SD	D	U	A	SA
7.	Prescription medication advertisements improve consumer knowledge about medications.	SD	D	U	A	SA
8.	Medication ads improve the communication between physicians and patients.	SD	D	U	A	SA
9.	Prescription medication ads can be confusing to consumers.	SD	D	U	A	SA
10.	Medication ads make it appear that prescription medications are safer than they may be.	SD	D	U	A	SA
11.	Medication ads interfere with the patient-physician relationship.	SD	D	U	A	SA
12.	Medication ads increase inappropriate prescribing by physicians because patients insist on using that medication.	SD	D	U	A	SA
13.	Medication ads provide enough information to help the consumer to decide whether they should discuss the medication with their physician.	SD	D	U	A	SA
14.	Prescription medication ads make consumers more aware of new medications.	SD	D	U	A	SA

15. Medication ads help patients have good conversations with their doctors. SD D U A SA

16. Prescription medication ads can create unnecessary concern about side effects. SD D U A SA

17. Have you seen television advertising for prescription medications for depression?

    1) Yes
    2) No

18. If yes, identify the medications you have seen advertised (select one or more)

    1) Cymbalta
    2) Effexor XR
    3) Lexapro
    4) Prozac
    5) Paxil
    6) Seroquel XR
    7) Zoloft
    8) Other: Please specify _____
    9) Unsure

19. Did you discuss the medication you saw advertised with your physician?

    1) Yes
    2) No

20. If yes, did this discussion result in your medication being changed medication?

    1) Yes
    2) No

21. Have you seen television advertising for over the counter treatments for seasonal allergies?

    1) Yes
    2) No

22. If yes, identify those medications you have seen advertised (select one or more)

    1) Allegra
    2) Benadryl
    3) Claritin

4) Zyrtec
5) Tavist
6) Other: Please specify _____
7) Unsure

23. Do you have insurance coverage for medication?

1) Yes
2) No

24. Have you seen a doctor in the past 3 months?

1) Yes
2) No

25. Have you ever been diagnosed with_____? (please circle all that apply)

Anxiety
Mononucleosis
Asthma
Depression
Migraine Headaches
Diabetes
Allergies

26. Has anyone in your immediate family (e.g. Mother, Father, Brother, Sister) ever been diagnosed with _____? (Please circle all that apply)

Anxiety
Mononucleosis
Asthma
Depression
Migraine Headaches
Diabetes
Allergies

27. How much television do you watch in an average week?

1) 0-5 hours

2) 6-10 hours

3) 11- 15 hours

4) 16 hours or more

28. Do you use any herbal supplements?

1) Yes

2) No

29. Have you seen an advertisement for herbal supplements?

1) Yes

2) No

30. If you answered yes to question 29: Did you discuss the herbal supplement you saw advertised with your physician?

1) Yes

2) No

Please indicate your response to the following statement by circling the corresponding letter.

SD= Strongly Disagree D= Disagree U= Undecided A= Agree SA= Strongly Agree

31.	Advertisements for herbal supplements improve consumer knowledge about herbal supplements.	SD	D	U	A	SA
32.	Ads for herbal supplements encourage consumers to talk with their physician about health problems they are having.	SD	D	U	A	SA
33.	Ads for herbal supplements empower consumers to play a greater role in medical decisions.	SD	D	U	A	SA
34.	Ads for herbal supplements confuse consumers	SD	D	U	A	SA
35.	Ads for herbal supplements make it appear that herbal supplements are safer than they really are.	SD	D	U	A	SA
36.	Ads for herbal supplements make consumers aware of new supplements.	SD	D	U	A	SA

37.	Ads for herbal supplements give enough information to help consumers decide if they should discuss the supplement with a doctor.	SD D U A SA

Appendix C

Vignette

Please read the vignette below

Sam

Sam is a freshman in college. Over the past nine months there has been deterioration in Sam's academic performance, and Sam often skips classes. Sam has been feeling constantly tired lately, and finds it difficult to sleep at night which is why it is too hard to get out of bed in the mornings. Concentrating in classes has been extremely difficult and grades have been dropping. Sam does not seem to be interested in anything lately and has been feeling sad, blue, and depressed.

You have $500 that you can use to help Sam. How would you spend the money? You can spend all $500 on one treatment or you can spread out it among different treatments (in $50 increments). Please indicate next to each treatment how much you would spend. **You must spend the full $500.**

Herbal Remedies $_____

Anti-depressant Medication $_____

Psychotherapy $_____

Total $_____

If you were depressed what form of treatment would you use?

_____

Are aware of the black box warning for antidepressants (may increase risk for suicide in children and teens)?

1) Yes
2) No

Appendix D

Depression Treatments

Questions 1- 4, 6-8, and 10-11 were positively scored and questions 5 and 9 were reverse scored. Questions 12-15 were not analyzed and were only included to mask the purpose of the study. These scores were then added together to get a total for each participant.

Please read the questions below and for each one indicate the letter that corresponds to your level of agreement.

SD= Strongly Disagree D= Disagree N= Neutral A= Agree SA= Strongly Agree

		1	2	3	4	5
1.	I believe that antidepressant medication is the only treatment for depression.	SD	D	N	A	SA
2.	If I felt mildly depressed I would use an antidepressant medication.	SD	D	N	A	SA
3.	If a friend of mine is mildly depressed I would recommend they use an antidepressant.	SD	D	N	A	SA
4.	If a friend of mine is moderately depressed I would recommend they use an antidepressant.	SD	D	N	A	SA
5.	I believe that there are other treatments besides medication that I would want to use before trying medication to treat depression.	SD	D	N	A	SA
6.	If I took an online quiz and it rated me as severely depressed I would take an antidepressant.	SD	D	N	A	SA
7.	I believe that antidepressants are the best treatment for someone with depression.	SD	D	N	A	SA
8.	If a friend of mine is severely depressed I would recommend they use an antidepressant.	SD	D	N	A	SA

9.	I would recommend that my friend talk to their doctor about other methods of treatment other than antidepressants.	SD	D	N	A	SA
10.	If I felt depressed after failing a midterm exam, I would use an antidepressant.	SD	D	N	A	SA
11.	If I felt moderately depressed I would seek treatment through the use of antidepressants.	SD	D	N	A	SA
12.	I believe that over the counter medications are the best way to treat seasonal allergies.	SD	D	N	A	SA
13.	I would recommend an over the counter treatment for allergies to a friend.	SD	D	N	A	SA
14.	I believe that there are other treatments for seasonal allergies that are better than over the counter medications.	SD	D	N	A	SA
15.	I would ask my physician for a prescription if I felt I suffered from seasonal allergies.	SD	D	N	A	SA

Appendix E

CES-D

Below is a list of ways you may have felt. Using the given answer choices, please tell me how often you have felt this way during the past week.

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
	0	1	2	3

During the past week:

a. I was bothered by things that usually don't bother me…….	0	1	2	3
b. I did not feel like eating; my appetite was poor….	0	1	2	3
c. I felt that I could not shake off the blues, even with help from my family or friends……	0	1	2	3
d. I felt that I was just as good as other people…..	0	1	2	3
e. I had trouble keeping my mind on what I was doing…	0	1	2	3
f. I felt depressed…….	0	1	2	3
g. I felt that everything I did was an effort……..	0	1	2	3
h. I felt hopeful about the future……	0	1	2	3

	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
	0	1	2	3
i. I thought my life had been a failure…..	0	1	2	3
j. I felt fearful…..	0	1	2	3
k. My sleep was restless…..	0	1	2	3
During the past week:				
l. I was happy…….	0	1	2	3
m. I talked less than usual….	0	1	2	3
n. I felt lonely…….	0	1	2	3
o. People were unfriendly….	0	1	2	3
p. I enjoyed life……	0	1	2	3
q. I had crying spells……	0	1	2	3
r. I felt sad…….	0	1	2	3
s. I felt that people dislike me……	0	1	2	3
t. I could not get going…..	0	1	2	3

Four items on this scale require reverse scoring. The scores were added together to get a depression rating for each participant.

Appendix F

Initial Email

I am contacting you on behalf of the Psychology Department to invite you to participate in the General Psychology subject pool study entitled “Delaware”. Participation in this survey study should require approximately 45-60 minutes. This is a very important study and full participation is required! If you do not wish to participate fully and provide accurate responses please don't take the survey (you can do a different writing assignment for your class credit). The information you will be providing is for my dissertation and it is very important to me.

If you do plan on participating you must watch ALL the videos in the survey to get credit. There is a timer attached to the videos to ensure they are all watched. If you don't watch the videos from start to finish you will NOT get credit for participation.

Please use the link below to respond to the survey. Please take the survey by April 17th, 2012. Please let me know if you have any questions.

I greatly appreciate your participation in this study. I look forward to hearing from you.

Sincerely,
Shelly Hopkins, M.A.
IUP Doctoral Candidate

Follow this link to the Survey:

Take the Survey

Or copy and paste the URL below into your internet browser:
https://iup.qualtrics.com/WRQualtricsSurveyEngine/?SID=SV_54RO7w9gddgZ6kI&_=1

Appendix G

Informed Consent Form

You are invited to participate in this research study. The following information has been provided to help you make an informed decision whether or not to participate. If you have any questions please do not hesitate to ask. Eligibility to participate in this study is determined by your enrollment in an introductory psychology course (PSYC 101). Participation in this study will count as credit toward your research for PSYC 101. As an alternative to participating in this study you may chose the read and review assignment option. Participation or non-participation in this study will not affect the evaluation of your performance in this class.

The purpose of this study is to investigate consumer behavior regarding various medical treatments. Participation in this study will require approximately 60 minutes of your time and is not considered part of Psychology 101. First you will be asked some demographic information. Next you will be asked questions regarding pharmaceutical use, advertising, and your behaviors in the past week. You will then be shown a series of videos. At the end of the videos you will be asked to read a vignette about someone, allocate money towards treatment options, and complete a survey about your opinion of various treatment options for allergies and depression.

Your participation in this study is voluntary. You are free to decide not to participate in this study or to withdraw at any time. Upon your request to withdraw, all information pertaining to you will be destroyed. Your responses will only be considered in combination with those from other participants. The information obtained during this study may be published in scientific journals or presented at conferences; your identity will be kept strictly confidential at all times.

There are no known risks or discomforts associated with this research. The information obtained in this study intends to increase the awareness of student behavior when seeking medical treatment. This can assist us when developing programs directed towards students.

Primary Researcher:
Shelly Hopkins, M.A.
Graduate student: Indiana University of PA
Psychology Department
Uhler Hall, Room 101
1020 Oakland Ave.
Indiana, PA 15705

Faculty Sponsor:
Dr. Lynda Federoff, Ph.D.
Psychology Department

Uhler Hall, Room 222
1020 Oakland Ave.
Indiana, PA 15705
(724) 357-4525

This project has been approved by the Indiana University of Pennsylvania Institutional Review Board for the Protection of Human Subjects (Phone 724-357-7730)

If you are willing to participate in this study please continue by choosing the "I wish to participate" option below then pressing the next arrow at the bottom of the page. If you do not wish to participate in this study please close your browser window.

- I wish to participate

Appendix H

Retake Survey Email

Please retake the survey and be sure to watch the videos. This information is very important to me. My data indicates that all the videos were not viewed from start to finish by you when taking the survey the first time. As indicated to receive full credit for participation you MUST WATCH ALL VIDEOS from start to finish.

I am contacting you on behalf of the Psychology Department to invite you to participate in the General Psychology subject pool study entitled “Delaware”. Participation in this survey study should require approximately 60 minutes.

Please use the link below to respond to the survey. Please take the survey by April 17th, 2012. Please let me know if you have any questions.

I greatly appreciate your participation in this study. I look forward to hearing from you.

Sincerely,
Shelly Hopkins, M.A.
IUP Doctoral Candidate

Follow this link to the Survey:
Take the Survey

Or copy and paste the URL below into your internet browser:
https://iup.qualtrics.com/WRQualtricsSurveyEngine/?SID=SV_54RO7w9gddgZ6kI&_=1

Appendix I

Debriefing Form

Thank you for participating in this study.

The purpose of this research is to shed light on college age students perceptions about treatments for depressions and the impact direct to consumer advertising (DTCA) has on their health care decisions. A second purpose of this study is to determine if the relation between exposure to anti-depressant medication advertisements and money allocated for the use of medication for the treatment of depression is mediated by attitudes towards DTCA in general. The final purpose of this study is to determine if there is a relationship between viewing pharmaceutical advertising and the endorsement of current mild to moderate depression.

You responded to a number of measures in this questionnaire. There was a questionnaire gauging your prior beliefs and knowledge about prescription medications, personal and family history of depression, television viewing habits, and views about DTCA and herbal supplements. These questions were used to determine if prior beliefs about advertising, family and personal history, television viewing, and current depression levels affect the treatments you decided to use after the vignette. The Center for Epidemiologic Studies Depression Scale (CES-D) was given to determine current depressive symptoms. This was used to determine if participants shown the pharmaceutical advertisements were more likely to endorse being mild to moderately depressed. Finally, you responded to a vignette, which was adapted from a vignette developed by An et al. (2009), followed by a monetary allocation exercise and a survey about treatment attitudes. The responses helped us to determine your preferred treatment choices.

The data collected will be analyzed to determine if there is a relationship between exposure to pharmaceutical advertising and increased monetary allocation for the use of antidepressants to treat depression. The data will also be analyzed to see if the relation between exposure to anti-depressant medication advertisements and level of monetary support for the use of medication for the treatment of depression will be mediated by attitudes towards DTCA in general. Finally the data will be analyzed to determine if participants who are exposed to the pharmaceutical advertisement will be more likely to rate themselves as being mind to moderately depressed.

It is possible that completing this questionnaire has caused some discomfort or raised some concern about your own or others' depressive symptoms. If you would like to talk to someone about these concerns, IUP's Center for Counseling and Psychological Services (C-CAPS) offers free services to students at the university. C-CAPS is located at 307 Pratt Hall and can be reached via telephone at 724-357-2621. More information about C-CAPS can be obtained at www.iup.edu/counselingcenter/.

If you have any questions or would like more information about this study, please contact Shelly Hopkins by e-mail (xhhp@iup.edu).

If you believe that you or someone you know is suffering from depression please seek help. Below you will find information about depression, as well as websites and books where you may seek more information about depression.

What is Depression?

Major depression is a serious illness which affects 15 million Americans. This is about 5-8 percent of the adult population in a given year. Major depression is persistent and is not a normal sadness or passing mood state. Depression significantly interferes with a person's mood, health, activity level, and may impact thoughts and behaviors.

Depression is two times more common in women than men. Half of people who experience depression one time will have continued episodes of depression during their life. These episodes of depression can occur as much as one to two times a year. Treatment is important and can aid in decreasing the severity and symptoms of depression.
(http://www.nami.org/Template.cfm?Section=Depression&Template=/ContentManagement/ContentDisplay.cfm&ContentID=88956)

What are the symptoms of major depression?

• persistent sad or irritable mood
• sleep disturbances
• difficulty thinking and/or concentrating
• feeling agitated or feeling slowed down
• lack of interest in activities that you once enjoyed
• feelings of guilt or worthlessness
• thoughts of death or suicide

Professional treatment is needed if you are experiencing several of these symptoms lasting longer than two weeks.
(http://www.nami.org/Template.cfm?Section=Depression&Template=/ContentManagement/ContentDisplay.cfm&ContentID=88956)

Books about Depression

- 100 Questions & Answers About Depression (2007), by Ava T. Albrecht, M.D. and Charles Herrick, M.D.
- Against Depression (2005), by Peter D. Kramer
- Feeling Good: The New Mood Therapy (1999), by David D. Burns M.D.
- Get It Done When You're Depressed: 50 Strategies for Keeping Your Life on Track (2008), by Julie A. Fast and John D. Preston, Psy.D., A.B.P.P.
- Lincoln's Melancholy (2005), by Joshua Wolf Shenk

Websites

http://www.nami.org/

http://www.apa.org/topics/depress/index.aspx

http://www.iup.edu/page.aspx?id=40187

http://www.mentalhealthscreening.org/screening/Welcome.aspx

Where to Turn- Local and Campus Resources

Center for Applied Psychology
210 Uhler Hall
Indiana University of Pennsylvania
Indiana, PA 15705
Phone: (724) 357-6228

The Counseling Center
Suites on Maple East, G31
901 Maple Street
Indiana, PA 15705
Phone: 724-357-2621

Community Guidance Center
724-465-5576

Crisis Intervention Hotline
724-465-2605

Thank you again for your participation in this study!