The Effects of Risk Disclosure and Ad Involvement on Consumers' Recall, Behavioral Intentions, Attitude Towards the Ad and Brand in DTC Advertisements

Constantina Kavadas

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John Molson

School of Business

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ABSTRACT

The Effects of Risk Disclosure and Ad Involvement on Consumers' Recall, Behavioral Intentions, Attitude Towards the Ad and Brand in DTC Advertisements

Constantina Kavadas

During the past decade pharmaceutical companies have increased their direct to consumer advertising (DTC). Unlike advertisements of other products, these ads contain both the benefits and potential risks of the product. Similar to ads employing fear appeals as a method of persuasion, theories in fear appeals may be used to predict and explain the behavior of consumers exposed to varying amount of risk information. An experimental study was performed to examine the impact of risk disclosure variations in print ads on high and low involved participants and examine if a relationship between theories in fear appeal persuasion and risk disclosure in DTC advertising may exist. The study was a 2 (involvement level) x 3 (disclosure of risk information) factorial design. The dependant variables of the study were: recall of information, attitude towards the ad and brand, and behavioral intentions. Significant differences were observed between participants for recall of information and their attitude towards the brand. Moreover, findings from research in fear appeals used in advertisements were applicable in predicting some of the differences between high and low involved participants' attitudes towards the varying amounts of risk information.

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1. Introduction

Many consumers are now aware of various prescription drugs for which they may or may not have a need for. With the advent of generic drugs and the fierce competitive market for prescription medication, pharmaceutical manufacturers have developed direct to consumer (DTC) advertising. Ever since the U.S federal regulations changed laws governing the advertising of prescription drugs in the 1980's, ads for prescription drugs have become common in popular magazines and on television. Pharmaceutical manufacturers are no longer promoting their products to doctors alone but are targeting the end users of their products, patients, through advertising (Williams and Hensel, 1995; Everett, 1991; Perri and Nelson, 1987). Until recently, Canadians have been indirect targets to such ads, coming into contact with them only through American magazines and television programming. Today Canadian federal laws have changed allowing pharmaceutical manufacturers to advertise directly to Canadian consumers as well.

The advertising of prescription drugs is one of the most important kinds of advertising that can directly impact the health and well-being of a consumer. It is essential that the promotional strategies used are socially responsible and take care not to put the consumer at any health risk (Chandra and Holt, 1999). Unlike traditional advertising in which only the benefits of a product are communicated to consumers, ads for prescription drugs must include a balanced amount of both benefits and risk information. The right amount, emphasis and specificity of the risk information must be conveyed such that the ad will be perceived as informative and not overshadow the

benefits of the drug. Furthermore, the risk information should not be understated by being glossed over and hidden by the ad's promotional message (Morris, Ruffner, and Klimberg, 1985; Morris and Millstein, 1984).

As with most advertising, prescription drugs are advertised in a positive light, displaying healthy satisfied consumers. Unlike other products, the potential health risks of the drugs are also included, which may create a negative tone to the ads. From the perspective of the marketer, a successful prescription drug ad communicates the risk information of the product but places most of the emphasis on the benefits hoping the consumer will have a positive impression of the ad. By doing so there may be an imbalance between the benefits and risks information of the product in the ads (Roth, 1996; Everett, 1991). Many researchers have examined this unique aspect of prescription drug advertisements in which the advertiser must disclose the potential risks associated with the product as well as the benefits. The focus of the majority of studies involving direct to consumer (DTC) advertising of prescription drugs has been on discovering the optimum amount of risk disclosure that will satisfy both the advertisers, whose goal is to sell the product, and the consumers, who want their rights of being informed protected (Kopp and Bang, 2000; Morris, Mazis, and Brinberg, 1989; Keown, Slovic, and Lichtenstein, 1984).

Research in DTC advertising included random samples in which participants were categorized as either sufferers or non-sufferers (Morris, Mazis, and Brinberg, 1989). Many studies do not even take into account that differences in responses may exist depending on the participant suffering of the advertised ailment. The distinction between sufferers versus non-sufferer does not take into account consumers who know

someone suffering from an advertised ailment and are therefore interested in such ads for someone else's benefit. Thus, these non-suffering consumers are involved with the ad, as a sufferer would be. Therefore, high versus low involved consumers is a more accurate distinction and leads to a better understanding of consumer processing of risk information.

Though one may initially feel that low involved consumers are of little interest to the advertisers, most consumers at some point will be required to learn more about a prescribed medication that they need. Therefore, low involved consumers are very much potential future customers. It is in the pharmaceutical manufacturers own interest to create ads in which consumers have a positive attitude towards, and perceive as trustworthy and reliable, since consumers' attitude towards DTC ads will in turn reflect on their attitude towards the pharmaceutical industry.

Previous studies have found that despite the risk information disclosed in these ads, consumers respond favorably to DTC advertising of prescription drugs (Everett, 1991; Perri and Nelson, 1987). To date researchers have found that consumers in general do have a positive attitude towards DTC advertising. Consumers want to be informed about the possible treatments available to them and believe that the ads are a good medium in learning about new drugs (Dickenson, 2001a; Blakenhorn, Duckwitz and Sherr, 2001; Everett, 1991). Other researchers, however, have found that direct to consumer advertising of prescription drugs tend to play up the benefits and downplay the negative aspects of the drug, while not providing enough valuable information to the consumer (Moore, 2000).

2. Purpose of Study

No known studies to date have examined if any differences exist between consumers' perception and processing of risk disclosure in prescription drug ads, depending on their level of involvement. It has been established in advertising-processing research that attitude towards the ad and brand as well as purchase intentions are greatly influenced by the consumers level of involvement with the advertisement (Celsi and Olson, 1988; Gardner, Mitchell and Russo, 1985; Petty, Cacioppo, and Schumann, 1983). The proposed research will examine if a relationship between consumers' level of involvement and attitude towards the prescription ad exist. Though pharmaceutical manufacturers may be targeting consumers with the advertised ailment, few studies to date have examined how non-afflicted consumers are affected by these ads, which may be potential future customers. By conducting research that examines how consumers perceive these ads, marketers can have a better understanding of how to improve and design pharmaceutical ads that are effective and socially responsible.

Previous studies have examined how varying amount of risk information in DTC ads affects consumers' attitudes and awareness of the ads promotional message (Everett, 1991; Perri and Nelson, 1987; Morris et al., 1985; Morris and Millstein, 1984). Building on past research the present study further examines consumers' attitude towards DTC ads by including the involvement construct in the theoretical model. Researchers in advertising have extensively examined the involvement construct (Andrews, Durvasula, and Akhter, 1990; Laczniak, Muehling, and Grossbart, 1989; Zaichkowsky, 1986; Greenwald and Leavitt, 1984). Drawing from such literature, the present study is an

experimental design in which the amount of risk information in a DTC ad and participants' level of involvement are manipulated.

In this study it is postulated that a consumer's attitude towards the ad, brand and behavioral intentions will depend on the amount of risk information communicated in the ad and will be moderated by their level of involvement with the ad. The primary objectives of the study are:

(1) How does the varying degree of risk information in a pharmaceutical ad affect consumers' attitudes toward the ad, brand and behavioral intentions?

(2) How is the relationship between the consumers' attitude towards the ad, brand, behavioral intentions and the varying degree of risk information further affected by the consumers' level of involvement?

3.Current Issues and Research

3.1. Type of Drugs Promoted by DTC Advertising

The most prevalent type of DTC advertising of a prescription drug are product specific that feature a particular company's drug and include both the benefits as well as the potential risks of the drug (Maddox and Katsanis, 1997). In order to avoid mentioning the sometime long list of side effects and potentially creating a negative portrayal of the drug, companies will sometime simply mention the drug's name and no additional information. Under such circumstances the Food and Drug Administration (FDA) does not require any mention of risk information since benefit information is not provided. Informational ads, in which the manufacturer is only providing information and mentions only the manufacturers name but not the brand name of any pharmaceutical product, are not required to include any risk information (Maddox and Katsanis, 1997).

These advertisements are created to increase disease awareness and encourage consumers to contact their physicians to learn more about possible treatments.

The type of drugs advertised depends, like most other products, on the potential market for a drug; the larger the market and hence the demand for a treatment, the more likely the pharmaceutical manufacturer will advertise directly to the consumer. A drug's potential side effects influences the marketing of a prescription drug as well. Drugs for which the side effects are not prevalent or mild are better suited for DTC advertising as opposed to drugs with severe and/or lengthy list of side effects (Roth, 1996; Sheffet and Kopp, 1990). "Studies have shown that pharmaceutical companies whose drugs are market leaders, are in the early stages of their life cycle, have relatively few side effects, target a broad customer base, and address chronic conditions in categories that are usually well understood and not particularly complex are most likely to advertise" (Roth, 1996). According to IMS Health (2000), the leading products of DTC promotional spending in 2000 were arthritis and allergy prescription drugs.

Table 3.1. US Leading Products by DTC Spend

Product	Corporation	Total Direct-Consumer US$ (000s)
Vioxx & Unbranded Arthritis	Merck & Co	159,491
Claritin Family & Unbranded Allergy	Schering Plough	117,538
Viagra & Unbranded Erectile Dys	Pfizer	108,735
Prilosec	AstraZeneca	107,450
Paxil	GlaxoSmithKline	92,050
Zocor & Unbranded High Cholesterol	Merck & Co	90,856

Celebrex & Unbranded Arthritis	Pharmacia	80,072
Flonase	GlaxoSmithkline	73,451
Prempro & Unbranded Menopause	American Home Pdts	69,583
Allegra	Aventis	66,926

3.2 The Right Media Mix for Prescription Drugs

Traditionally the promotion of prescription drugs was to doctors only. Pharmaceutical manufacturers promoted their products through sales force, journals and conferences. Today sales forces account for the largest part of promotional spending, followed by DTC advertising. Every year pharmaceutical companies keep spending more and more of their total promotional spending on DTC advertising (Brichaceck and Sellers, 2001).

Surveys have found that prescription drugs advertised directly to consumers are now the largest and fastest selling medicines (Dickinson, 2001b). Doctors wrote 34.2% more prescriptions in 1999 than in 1998 for the 25 top most promoted directly to consumer drugs that contributed most to the overall drug spending. Doctors wrote only 5.1% more prescriptions for all other prescription drugs (Charatan, 2000).

Traditionally DTC largest sector is TV advertising. In 1999, 57% of the DTC promotion amount was devoted to TV ads (Liebman, 2001). Allergy drugs was one of the larger categories advertised to consumers between October 1999 and September 2000 with 70% of the amount spend on DTC advertising of allergy products directed on television. Though TV appears to be the favored medium for DTC advertising studies are showing that it may not be the best in the terms of return on investment. Studies are finding that television advertising is showing low levels of product association and brand

recall (Liebman, 2000). A survey in which unaided recall was measured found that only four of the top advertised drugs in 2000 – Prilosec, Claritin, Celebrex, and Zyban- finished in the top ten for unaided recall by consumers. Five drugs in the top four-month ad expenditure category- Xenical, Singular, Tamiflu, Paxil, and Flovent- were not among the products best recalled. Viagra had the highest unaided recall, mentioned by 40 percent of physicians and 18:5 percent of consumers without advertising in that period (Anonymous, 2000).

One of the first drugs to receive success from television advertising was the allergy relief drug Claritin. Claritin sales increased from $1.4 billion in 1997 to $2.6 billion in 2000. The success was partly due to the fact that Hisminal and Seldene were at that time being pulled from the market and that the market conditions for Claritin were favorable. There was a void to be filled and Claritin's TV exposure helped in getting the successful results. As a result other companies believed TV exposure would benefit their drugs as well though they may not have had similar market conditions. Some advertisers believe that in such cases second, third or lower tier drugs get less return for their TV dollars, and their advertising indirectly helps in the promotion of the top selling drug. For instance their advertising may help in reminding potential customers to get help and ask their doctors about available treatments, thereby expanding the market. When the time comes for the patient to finally ask their physician about a medication, they may not recall the name, and the doctor will most likely prescribe the most popular brand at the time (Liebman, 2001).

Some promoters believe that the advertising of prescription drugs is more difficult than the advertising of other goods for several reasons. First, in the case of consumer

products, most of the time the product itself is shown in the TV ad, creating a package recall, therefore allowing the consumer to easily identify the advertised product. In the case of prescription drugs, the consumer will have a more difficulty in the doctor's office recalling the name without assistance (Liebman, 2001). Another factor may be the difficulty associated with advertising such products as prescription medication. For instance, often times these ads do not include an emotional appeal, due to the fact that the ads are geared at being more factual rather than emotional.

Promoters strongly suggest that a better mix between television and print media is the best way to advertise prescription drugs (Dickinson, 2001c). Television ads can be perceived as a reminder whereas magazine ads provide the consumer with more information before seeing their doctor. Surveys have found that consumers show greater recall when exposed to magazine ads rather than TV ads. One factor may be that a magazine page can be removed and retained (Brichacek and Sellers, 2001). Furthermore, studies have found that TV may be a better medium to advertise general risk information such as "see you doctor for more information" rather than risk information that is more specific. In cases where specific risks were communicated participants reacted negatively whereas general risk information was perceived more positively for TV medium (Morris, et al., 1985). This study though examined people who did not necessarily suffer from the advertised ailment. Studies in which the participants did in fact suffer from the advertised ailment, perceived ads that did provide adequate risk information more positively. For instance when asked which ads provide adequate information about the risks of taking the advertised medication, 62% of respondents said

that the newspaper ads did, 55% cited magazine ads, and 49% said TV commercials (Levy, 1999).

4. Risk Information in DTC Advertising

4.1. Misleading Ads

Unlike ordinary package goods, prescription drugs differ such that "(1) prescription drugs are not bought by choice, but by necessity, (2) the consequences of misuse of prescription drugs are potentially quite serious, and (3) prescription drugs do not simply impact the quality of a patient's life, but in many instances, they affect life itself." (Castagnoli,1998). The public expects a higher quality of advertising from the pharmaceutical industry (Charatan, 2000), and it is for such reasons that the FDA has such high standards that must be met before an advertisement may be placed in the media. For instance, the FDA monitors the information content of an ad requiring that all print advertisements fairly balance benefit and risk information. Risk information is to be prominent and readable in the main body copy of the ad and a summary of product use, indications, contraindications, potential side effects and overdoses should be provided as well. This summary is usually given on the back page of the ad. (Dickinson, 1994).

Despite the rapid and profitable growth of DTC prescription drug advertising, it has not been without controversy. Physicians, pharmacists and policy makers have debated the use of DTC advertising to consumers as a source of medical information (Roth, 1996). Critics of DTC advertising believe that medicine should not be perceived as simple articles of commerce, and that these ads contain information in a limited form, presenting everything to the consumer as "wonder drugs" (Braus, 1998; Petroshius, Titus,

and Hatch, 1995). Researchers have found that DTC advertising of prescription drugs tend to play up the benefits and downplay the negative aspects, while not providing enough valuable information to the consumer (Moore, 2000).

The pharmaceutical industry has defended itself by claiming that their ads increase the consumers' awareness of available treatments. Furthermore, their ads do not simply state the benefits of the drug but the potential side effects as well, therefore providing the consumer with the benefits/risks of the product and thus allowing the consumer to make better judgments (Charatan, 2000).

Today consumers have taken more control and a self-care approach to their well being, seeking to educate themselves concerning their health. Though these ads may be criticized, some consumers do feel it is their right to be provided with information regarding their options in health treatments. The FDA protects the consumer's rights by making sure prescription drug ads do communicate the information rather than simply attempt to advertise the drug as another product. For instance, an advertisement "...must accurately communicate the drug's known benefits and risks in a way that fairly portrays the pharmacological properties of the product...furthermore, both drug benefit and risk information must be presented in comparable depth and detail" (Roth, 1996). When these requirements are not met the FDA either issues warnings to the pharmaceutical manufacturer or discontinues the ads.

The FDA has created the Division of Drug Marketing, Advertising and Communications (DDMAC), whose sole purpose is to monitor DTC advertising of prescription drugs (Dickinson, 1998). Many cases have occurred in which prescription drug advertisements have to be changed or discontinued permanently. For example

Alcon Laboratories were expected to change a TV ad for their product, Patanol. The product's FDA approved labeling says its effective up to eight hours therefore the company should not have claimed it "soothes your itchy allergy eyes for eight hours." Furthermore, the DDMAC found that Alcon summarized Patanol's side effects to briefly and failed to communicate the side effects burning and stinging (Dickinson, 1998).

Other examples of misleading ads include the promotion of Nitrocol Inhaler, an inhaler that helps smokers quit, by McNeil Consumer Products Company. The DDMAC found that their TV ad, web site information, and DTC print ad was misleading in suggesting that using the inhaler is as easy as smoking a cigarette (Dickinson, 1998). Pharmaceutical manufacturers, Eli Lilly, stopped running a DTC TV ad for their premenstrual dysphoric disorder drug, Sarafem (fluoxetine), after the DDMAC found it to be misleading and lacking fair balance. The ad featured a women becoming frustrated while trying to separate her shopping cart from other carts lined up in front of a store while it ran concurrent audio stating "Think it's PMS? It could be PMDD." DDMAC criticized this ad because the presentation by the imagery and audio "never completely defined or accurately illustrated PMDD and there is no clear distinction between premenstrual syndrome (PMS) and PMDD communicated." (Dickinson, 2001d).

4.2. New Liability Cases for Pharmaceutical Manufacturers

The manufacturers of prescription drugs have the duty of informing the physician of all the possible risks and precautions in taking a medication but not to the end user- the patient. Therefore, if the manufacturer provided adequate information about a certain drug's effects to the prescribing doctor, the manufacturer is immune from liability for any

harm caused to the consumer from use of the drug, and the consumer may sue only the prescribing physician. This exception to the duty to warn consumers directly by pharmaceutical manufacturers is known in the US as the learned intermediary doctrine (Matter, 2002).

The learned intermediary doctrine was first developed to reflect the fact that consumers have contact with their physician regarding prescription medication and not the actual pharmaceutical manufacturers. The development of DTC changed that relationship. Now the manufacturer communicates directly to the consumer through DTC advertising. Unlike before the manufacturer can now be held liable as well. For instance, the pharmaceutical manufacturer may be liable for failure to warn physicians in cases where there has been significant over-promotion of certain products. The California Supreme Court determined that manufacturers whose formal warnings had technically complied with regulations, could still be liable for failure to warn if other material distributed by the manufacturers may have diluted the warnings. This same argument can be extended to the over promotion of drugs to the consumer through DTC advertising. Not only does the over promotion of prescription drugs dilute the warnings of possible side effects but creates the additional problem of creating a demand for a drug when essentially there is no need. This is more common with lifestyle drugs, such as Viagra, in which the patient request is greater than the actual medical need.

Presently courts in the US are debating the applicability of the learned intermediary doctrine. Many critics of DTC advertising believe that the relationship between physician and patient is changed due to this type of advertising. Physicians are now perceived as having a passive role; that patients are obtaining diluted information

through DTC advertising and are more active in the decision making of which medication is best for them. Since the physician is no longer the only source of information and the manufacturer is putting itself in direct contact with the patient the learned intermediary doctrine may no longer be applicable.

One of the negative aspects of DTC advertising is that it has now exposed pharmaceutical companies to the possibility of liability. For instance, several citizen action groups have filed suit in New Jersey against Schering-Plough and its advertising agencies, for fraud. Studies showed that their product, Claritin an allergy drug, failed to help many people and often performed no better than placebo, consumers therefore believe the ads were deceptive. The suit proposes a class action on behalf of millions of consumers who have purchased Claritin products, and seeks a refund of money in addition to treble damages, a permanent injunction, and attorney costs and fees (Dickinson, 2001e).

4.3. Consumer Attitudes Toward DTC Advertising of Prescription Drugs

Although DTC advertising of prescription drugs has increased dramatically over the past decade, only a few empirical studies provide evidence as to the effects of warning information provided in consumer-directed promotion (Kopp and Bang, 2000; Williams and Hensel, 1995). The major issue addressed by researchers is the possibility of communicating risk information and the promotional aspect of the drug in a fair and balanced manner, as required by regulation. Specifically, how must the ad be structured in order to be informative and still be perceived positively by consumers? Furthermore, due to the risk content, do consumers react and respond to prescription ads differently

than promotions for other products? A few researchers have attempted to provide some empirical data as to the impact of risk information on the attitudes of consumers.

A major concern in the promotion of prescription drugs is the potential of the risk information adversely affecting the product's benefits. Consumers may be overwhelmed by the inclusion of all the possible side effects and neglect to consider the product's benefits while viewing an ad. Morris, Mazis, and Brinberg (1989), found that consumers exhibited "trade-offs" in the processing of the commercial message. For instance, cases in which the amount of risk information was increased, produced an increase in the amount of risk information recalled by participants but a decrease in the amount of benefit information recalled; a greater awareness and knowledge of product risks were associated with lower awareness and knowledge of product benefits.

Though a greater amount of risk information may result in an increase in recall, consumers perceive ads that contain too much risk information as irritating (Morris, et al., 1985). Researchers have also found that consumers respond differently to risk information depending if it is general or specific. Morris et al., (1985) found that larger amounts of specific risk information (e.g. a side effect of the drug is gout) in television ads appear to be viewed more negatively than drugs whose ads contain general warning information (e.g. the drug causes serious side effects). Furthermore, Tucker and Smith (1987) found that consumers do prefer some rather than no warning information at all, but respond more favorable to risk information that is general rather than specific.

Some critics of DTC advertising believe consumers will judge prescription drugs based on 'consumer-oriented' characteristics such as packaging, amount of advertising, and brand name, rather than make judgments based on rational, important product

attributes. Everett (1991) conducted a survey measuring what consumers deemed as important in their judgment of prescription drugs. The participants were required to rate the importance of thirteen possible determinants of a patient's choice between two prescription drugs. His findings indicate that the top four product attributes deemed most important in the evaluation of a prescription drug were, in the order of most important: possible side effects, doctor recommendation, strength of drug, and if they have used it before. Brand name was tenth whereas seeing it advertised was twelve of thirteen.

Other surveys have found that consumers generally perceive DTC advertising as informative (Blakenhorn et al., 2001; Levy, 1999; Alperstein, and Peyrot, 1993). One study found that consumers believe that DTC advertising provides a valuable service in educating the public about medications and treatments but that it does not provide enough new information (Levy, 1999). The study, which only included participants that suffered from an advertised ailment, revealed that 70% of those surveyed did not believe that DTC advertising provided new information.

Researchers have also examined if DTC ads motivate consumers to obtain more information regarding the drug from other sources (Everett, 1991; Perri and Nelson, 1987). One study reports that one-quarter of consumers exposed to DTC advertising will initiate a discussion with their doctor about the advertised medication; thirteen percent of the respondents actually contacted their doctor as a result of seeing the ad; and ten percent discussed the ad with their doctor at a later time (Levy, 1999). Williams and Hensel (1995) examined if a favorable attitude towards DTC advertising was related to intention to seek additional information and from what source. Their findings indicate that a more positive attitude towards DTC advertising led consumers to seek more

information from friends and the pharmacist. Furthermore, participants with a higher level of education and those who were more knowledgeable about the advertised drug were more likely to seek additional information.

Maddox and Katsanis (1997) examined how the patient-physician relationship may be affected by DTC ads. Their study showed that participants that received a prescription for an advertised drug they saw, neglected to further ask questions to their doctor concerning the drug. They felt enough confidence in their doctor and sufficiently informed to not require any further information.

4.4. A Comparison of Fear Appeals and Warning Information in DTC Ads

Ads using fear appeals are described as "a type of psychoactive ad which is capable of arousing fear in the viewer regarding the effects of the viewer's sub optimal lifestyle" (LaTour, Snipes, and Bliss, 1996). These advertisements include the negative consequences of *not* buying certain products. DTC ads include the potential side effects in *taking* the advertised product. Though both types of ads have their differences some similarities can be observed, and therefore, fear appeal theories may be applied to predict and explain some of the attitudes of consumers towards DTC ads.

The use of fear appeals is based on the belief that some form of arousal is necessary to change the individual's behavior, and that the presentation of information alone is not enough in doing so (Leventhal and Niles (1964) in Henthorne, LaTour and Nataraajan, 1993). Fear appeals in advertising have been used to change existing harmful behaviors of consumers. For instance, advertisements against smoking have included images of patients suffering the health consequences of smoking. These may include

graphic images intended to scare the consumer into quitting their smoking habit (Fox, Krugman, Fletcher and Fischer, 1998). However, DTC ads of prescription drugs do not intend to 'scare' the consumer but rather inform the consumer of the potential side effects that may occur in taking the advertised drug. Both fear appeals and potential side effects are disturbing information, and too great an amount of either may cause the consumer to avoid such ads, thereby defeating the purpose of the ad, to persuade the consumer.

Studies have centered on finding the optimal amount of fear appeals that can be used without becoming overwhelming for the consumer. For instance the effect of fear appeals are influenced by the level of defensive techniques consumers apply when faced with a threatening message. These defensive responses include "avoiding the message, minimizing the severity of the threat, selectively attending the message, discounting the threat, and denying its personal relevance (Eagly and Chaiken, 1993, in Keller and Block, 1996). Whenever any of these defensive techniques are applied the individual will not elaborate on the message and thus inhibit message persuasiveness (Keller and Block, 1996; Kisielius and Sternthal, 1984). Studies have also found that individuals generate more counterarguments and had poorer recall of harmful consequences when high rather than low levels of fears were evoked by an appeal (Keller and Block, 1996). These findings are similar to those in DTC advertising research in which consumers perceived ads containing specific risk information as irritating and preferred general, less threatening warnings (Tucker and Smith, 1987).

Extreme use of fear appeals has been criticized as unethical and arousing negative feelings in consumers, (Bush and Bush, 1994). Researchers have found that invoking too much fear creates feelings of anxiety, which causes the consumer to avoid the ad (LaTour

et al., 1996). Henthorne, LaTour, and Nataraajan (1993) have formulated a model of the fear arousal process based on theories of arousal and anxiety.

Their model proposes that weak fear appeals elicits tension in the viewer and this in turn will cause feelings of energy. At this stage the viewer may be more attentive and is willing to elaborate on the message. However, strong fear appeals, elicits tension which activates anxiety. According to the researchers the resulting effect of anxiety is to dissipate energy and thus produce negative feelings. Therefore, there is an optimal level of arousal elicited by the fear appeals, resulting in effective persuasiveness. However, crossing this optimal threshold, results in anxiety and the use of defensive techniques by the viewer to avoid the ad's message.

In this study it is postulated that warning information used in DTC advertising of prescription drugs, may elicit anxiety in the viewer in the same manner as strong fear appeals. Though these warnings are of the consequences that may occur in taking the advertised product, too much risk information may elicit tension and thereby anxiety. Therefore, it is expected that highly involved participants exposed to ads containing a disproportionate high amount of risk information in comparison to the benefits of the drug, will elicit a negative response from the viewer.

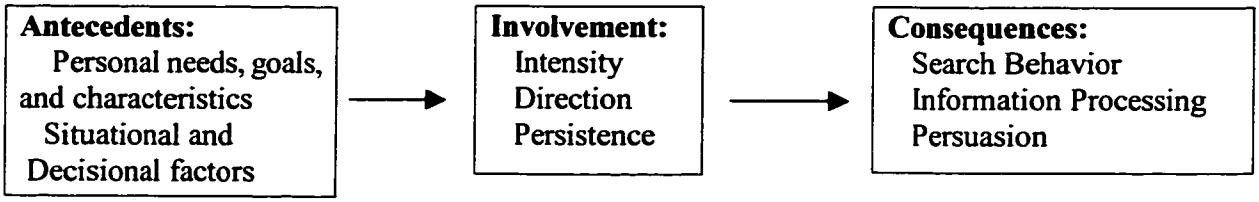
5. The Involvement Construct

5.1. Definition of Involvement Construct

One of the most controversial topics in advertising research has been the conceptualization of the involvement construct. For years there have been numerous ideas as to how to conceptualize and measure consumer involvement. Researchers have

construed different theories as to the processing strategies employed by consumers and how involvement fits in to this process. Message involvement was first conceptualized in the persuasive communications literature as "the number of bridging experiences, connections or personal references" an individual makes between him/herself and a stimulus (Krugman, 1965, in Laczniak et al., 1989). Today, there does not appear to be any universally accepted conceptualization of message involvement. For instance some researchers have defined involvement in terms of attention capacity (Zaichkowsky, 1985), in terms of personal relevance (Park and Young, 1986), and in terms of elaborative processing (Batra and Ray, 1986). Some researchers have attempted to find some commonalities between the different theories and approaches to the conceptualization of involvement (Andrews, et al., 1990; Laczniak, et al., 1989). For instance, involvement is a situation-specific and transitory state in which an individual engages in elaborative processing. These elaborations are most prevalent when the message is personally relevant (Andrews et al., 1990; Zaichkowsky, 1985). Since the information is personally relevant the individual will devote greater processing effort (Petty et al., 1983) and attentional capacity (Greenwald and Leavitt, 1985) to the message in the ad. Based on the existing literature Andrews et al, (1990) have developed a framework for the conceptualization of the involvement construct (see figure 1).

Figure1. Andrews, Durvasula, and Akhter's (1990) Framework for the Conceptualization and Measurement of the Involvement Construct



The position taken in this study is that involvement is "an individual, internal state of arousal with intensity, direction and persistence properties" (Andrews et al., 1990). Intensity, refers to the degree of arousal "to engage in specific information-processing or goal-related behaviors"; direction of involvement refers to the stimulus (e.g., issue, product, advertisement) toward which the arousal is channeled; and persistence refers to the duration of the involvement intensity (Andrews et al., 1990). Most research has indicated that level of involvement, is preceded by various antecedents and followed by various consequences. These antecedents can be grouped into two main categories: (1) personal needs, goals and characteristics, and (2) situational and decisional factors. There is extensive work in which researchers have examined how various antecedents influence the level of consumer involvement. For instance the greater the personal relevance of a product, the more involved a consumer will be with an ad (Celsi and Olson, 1988; Zaichkowsky, 1985; Petty, et al., 1983).

As seen in the framework the internal state of arousal is separated from its antecedents and consequences. One of the primary problems with defining the involvement construct is the confusion of the antecedents and consequences of

involvement with involvement per se. "Cognitive and behavioral activity remains a consequence (as opposed to an indicator) of the state of involvement. The antecedent conditions of involvement (e.g., purchase occasions, personal relevance, risk, etc.) will first help determine the consumer's involvement direction or goal-object selected" (Andrews et al., 1990). Batra and Ray (1986) believe that the amount of message related cognitive responses at the time of ad exposure are a measure of the involvement state.

5.2. Use of Concept

Some researchers believe the involvement construct can be fully understood not only by considering the levels of involvement (high vs. low), but also by distinguishing the types of involvement (Park and Young, 1986; Arora, 1982). Rather than define involvement based on the degree to which the message contents are relevant to the individual it might be more appropriate to examine the motives underlying personal relevance. For instance, a consumer may be highly involved with an ad because it emphasizes the brand's functional performance (utilitarian motive) or "because it appeals emotionally or aesthetically to an individual's need to express an actual or ideal self image to the outside world (value-expressive motive)" (Park and young, 1986; Holbrook and Hirschman; 1982; Sirgy, 1982). Park and Young (1986) proposed that there are two main types of motives that underlie involvement: utilitarian motives lead to cognitive involvement whereas value-expressive motives lead to affective involvement. Therefore, high involvement based on a high degree of relevance of the message contents is characterized as high cognitive involvement, and high involvement based on the actualization of an actual or ideal self-concept is termed high affective involvement.

Houston and Rothschild (1977 in Laurent and Kapferer (1985)) made a distinction between enduring involvement and situational involvement. The former stems from the individual, and "reflects a general and permanent concern with the product class" (Laurent and Kapferer, 1985). Enduring involvement is based on the belief that individuals have a perception that the product is related to centrally held values that define one's identity. Situational involvement reflects concern with a specific situation such as a purchase occasion. For example a consumer may usually buy various low priced brands of liquor in a stochastic manner because of low enduring involvement. At an occasion at which s/he will be visiting their boss, a high involvement decision would be made to purchase a specific brand. Situational involvement is heightened when the consumer perceives risk in a specific situation.

Researchers have also defined what is emotional versus rational involvement. For instance, the purchase of some products is devoid of any affect or pleasure. In such instances the consumer merely attempts to optimize the cost-benefit ratio when making the purchase decision (Hirschman and Holbrook, 1982; Vaughn, 1980).

Laurent and Kapferer (1985) believe there is more than one kind of consumer involvement. Based on the assumption that no single indicator of involvement could satisfactorily describe, explain, or predict involvement, Laurent and Kapferer (1985) proposed that researchers attempt to measure the involvement profile in order to fully understand the relationship between a consumer and a product category. Their research indicates that there are five facets of involvement: (1) perceived importance of the product, (2) perceived importance of negative consequences in case of a poor choice, (3) the perceived probability of making such mistake, (4) symbolic value attributed by the

consumer to the product, its purchase, or its consumption, (5) hedonic value of the product, emotional appeal, and ability to provide pleasure and affect. Their study found the facets were correlated and that each facet predicted specific behaviors. Therefore, it is not enough to simply know the consequences of one antecedent but rather have a full profile because different facets have different influences on selected aspects of consumer behavior.

5.3. Processing Strategies

(1) Brand and Nonbrand Processing Strategies

Based on Gardner, Mitchell, and Russo (1985) the processing of an ad occurs in two stages: basic comprehension, and elaboration. The first stage consists of basically understanding the meaning of the elements in the ad. The second phase includes counterarguments and inferences made about the content of the ad. These two stages are not completely independent, but rather are influenced by prior knowledge already stored in memory. The type of elaboration that will occur will affect how the information is encoded in our memory, how it relates to other information already stored in memory, and how easily it will be recalled. What determines the nature of the type of elaboration that will occur during processing depends very much on the goals of the individual while viewing the information. For instance, someone interested in purchasing the advertised product will engage in more brand evaluation leading to a more elaborative processing than somebody not interested in the product. Gardner, et al. (1985) believe involvement is related to the elaboration process and view involvement " as a situation specific state variable with components, intensity and direction". Intensity is related to the amount of

attention that is devoted to what is being communicated to the individual. Direction is related to the processing strategy that is used by the individual, which is determined by the individual's goals.

There are two types of processing that are relevant to advertising effects: brand and nonbrand processing. An individual that is interested in the advertised product will employ a brand evaluation process; they will use strategies to acquire information about the product and evaluate it for potential purchase. During this process elaborations about the product will occur. An individual not interested in purchasing a product but examining an ad for other reasons will employ nonbrand strategies. In such case the individual will make fewer, if any, inferences about product attributes, performance, and brand elaborations.

Gardner et al. (1985) view involvement in terms of both attention and strategy. High involvement requires both a high level of attention and a brand evaluation strategy. If either the attention level is low or a nonbrand strategy is used, then low involvement occurs.

Their findings indicate that individuals that employed a brand evaluation process recalled more knowledge and verified brand statements more accurately and more quickly. The nonbrand group processed information mainly about the form, rather than the content of an advertisement.

(2) Situational and Intrinsic Sources of Involvement

Researchers seem to agree that perceived personal relevance is the essential characteristic of involvement (Richins and Bloch, 1986). A consumer's level of

involvement with a product or situation is determined by the degree to which s/he perceives the concept to be personally relevant. In situations in which the ad message has a high personal relevance to the recipient, s/he will display a higher level of involvement, thus paying closer attention to the arguments in the ad, whereas in a low involvement situation the personal relevance is trivial (Petty et al., 1983)

Celsi and Olson (1988) have defined this motivation to process personally relevant information as felt involvement, which refers to a "consumer's overall subjective feeling of personal relevance." Unlike Houston and Rothschild (1977) Celsi and Olson (1988) treat enduring involvement and situational involvement as antecedents or sources of felt involvement rather than as separate types of involvement. In their model they describe two antecedents to felt involvement: situational and intrinsic sources.

A wide variety of stimuli and cues can serve as situational sources. Examples include promotions such as rebates, coupons and price reduction, which may activate such values as saving money. Situational sources are dynamic and changeable and the felt involvement created by them is (transitory/ not permanent). On the other hand, intrinsic sources of felt involvement are "stable, enduring structures of personally relevant knowledge, derived from past experience and stored in long-term memory" (Celsi and Olson, 1988).

Most researchers have focused on situational rather than intrinsic sources of personal relevance though Celsi and Olson (1988) believe both contribute to felt involvement. This may be due to he fact that situational factors are easier to manipulate and therefore, examine than within individual characteristics. Some researchers have attempted to measure consumers' intrinsic sources of personal relevance for products.

For instance Zaichkowsky (1985) developed a 20-item scale to measure consumers' enduring involvement with products. In this case individuals were viewed as having relatively stable and enduring involvement levels with a particular stimulus. This view differs from other definitions of involvement (Laczniak, et al., 1989; Gardner et al., 1985) that view involvement as situational-specific or transitory in nature.

(3) Elaboration Likelihood Model

The basic tenet of the Elaboration Likelihood Model (ELM) is that different methods of inducing persuasion may work best depending on whether the elaboration likelihood of the message is high or low (Petty et al., 1983). Therefore, if the individual elaborates on a message they are more likely to think about the content of the message in greater depth. This route to persuasion is termed the central route. A situation in which the product or issue is personally relevant, the consumer becomes more involved with the communicated message. A highly involved person will process information through the central route, thus paying closer attention to the message argument, "exerting greater cognitive effort to comprehend the ads, focusing more attention on product-related information, and engaging in more elaboration of the product information contained in the ads" (Zhang and Buda, 1999). Situations in which a product or issue is not personally relevant, the consumer is not involved with the message. Thus, the consumer is not likely to elaborate or make any personal connections with the message content. Based on ELM, under a low-involved scenario, the peripheral route to attitude change is most effective. In such case, the consumer will not pay close attention to the message argument, but rather how the message was presented to them. Peripheral cues such as the endorser,

music during the ad, presentation will have more of an impact in attitude change, rather than the argument quality of the message.

Under low involvement conditions a consumer may also depend on the frequency heuristic to make product choices (Alba and Marmorstein, 1987). Frequency knowledge is a tally of the number of positive and negative attributes associated with a brand, irrespective of their meaning or importance. As a result any consumer, regardless of the consumer's product class knowledge, can use the frequency heuristic. Therefore, rather than examine the quality of a message argument, when involvement is low a consumer may simply look at the number of arguments in a message.

(4) Audience Involvement

The involvement process has also been defined as a series of "connections" (Greenwald and Leavitt, 1984; Krugman, 1965). Situations in which an advertised product is personally relevant leads to greater cognitive effort in understanding the message content and therefore leading to further associations in the mind, which can be recalled during time of purchase. The more involved a consumer is, the more connections are created in memory at the time of encoding (Petty et al., 1983).

Based on the notion of "connections" Greenwald and Leavitt (1984) developed the notion of audience involvement. "Audience involvement is the allocation of attentional capacity to a message source, as needed to analyze the message at one of a series of increasingly abstract representation levels." These increasingly abstract and complex representations are viewed as levels of involvement in this research stream. The four levels of involvement are: (1) preattention, (2) focal attention, (3) comprehension,

(4) elaboration. The four levels differ "in the abstractness of symbolic activity used in the analysis of an incoming message". This analysis of levels of involvement is based on serial processing assumptions, in which message analysis occurs in an orderly sequence of stages. Therefore the first level, preattention, requires the least of attentional capacity. The second level requires slightly more capacity to focus on one message source. The comprehension level involves the understanding of the message content. The final stage, elaboration, requires the most capacity to establish an integration of the message content with audience member's existing conceptual knowledge.

5.4. Comparison of Involvement Processing Strategies

Research streams dealing with "connections" and audience involvement differ from the ELM model and brand versus nonbrand processing such that the latter focus on the personal relevance of a product, an antecedent of involvement, whereas in the former research connections can be viewed as consequences of a high or low involvement.

Gardner et al. (1985) contrast their two-factor model with that of Greenwald and Leavitt (1984) and that of the elaboration likelihood model, which stress a single factor- the amount of attention or cognitive resources devoted to processing the content of the advertisement. Gardner et al. (1985) believe that the single factor model overlooks the different effects caused by their separate manipulation. For instance during a nonbrand evaluation, with full attention the individual may not evaluate the attributes of the product but will still have some comprehension of the ads message. The individual will acquire information concerning the product but may not be as critical due to fact that he or she will not produce any counterarguments to the message.

6. Theoretical Model

Based on the preceding review of DTC advertising literature the following conclusions can be made regarding the content of prescription drug advertising and its effect on consumers. Studies indicate that consumers respond differently to print and television prescription drug ads (Morris et al., 1989; 1985). For instance, while consumers value information presented in print media, they perceive it more negatively when a lot of information is presented to them on television. This may be because of the limited time they have to process the potentially important information from a television ad. Studies of consumers' emotional responses to televised prescription drug commercials found that commercials without any risk disclosures were viewed positively but were also judged as misleading (Morris, et al., 1985).

Studies (Kopp and Bang, 2000; Tucker and Smith, 1987) indicate that though consumers appreciate and better retain information that is specific, they tend to pay less attention to the benefits of a drug when the risk information is specific. This aspect of consumer information processing makes it difficult for promoters and regulators to develop DTC ads because this trade off can be harmful to consumers who require a medication and avoid it due to its potential risks.

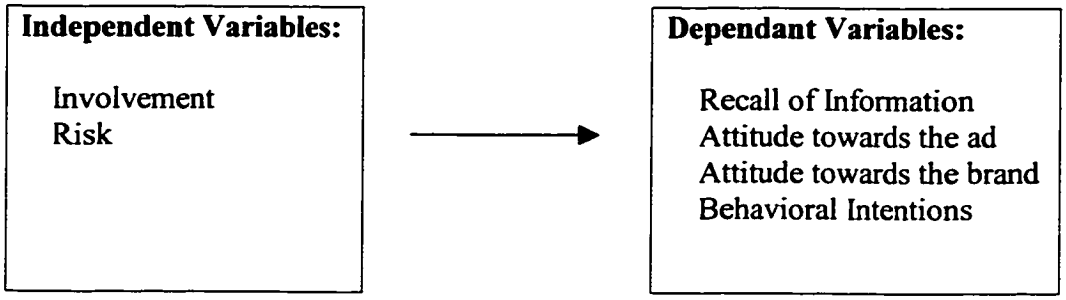
Generally, consumers perceive DTC advertising as informative (Blakenhorn et al., 2001; Alperstein and Peyrot, 1993), though consumers who suffer from the advertised ailment believe DTC ads do not provide new information (Levy, 1999). Researchers have also established that consumers with favorable attitudes toward DTC advertising were more likely to seek additional information from other sources in comparison to consumers with less favorable opinions of DTC advertising (Williams and Hensel, 1995).

Expenditures in DTC advertising continue to grow every year, though few studies provide evidence to the effects of warning information in ads on consumers (Kopp and Bang, 2000). Based on the preceding review of the involvement construct, the present researchers believe it is an important construct in the understanding of consumer information processing. No known study to date has examined how consumers' level of involvement may affect their attitude towards DTC ads. By categorizing participants as either low or highly involved different results are expected in comparison to other studies. For instance, though studies (Morris et al., 1989; 1985; Tucker and Smith, 1987) have shown that consumers react more positively to general rather than specific information, a highly involved consumer is capable of considering the information presented to them more thoroughly and therefore appreciate and require the specific information in comparison to a low involved consumer. Therefore, how a consumer reacts to the content of risk information depends on their level of involvement.

A limitation of some of the past studies may have been their sample. For instance Perri and Nelson (1987) did not take into account if the participant is or is not suffering from the advertised ailment at the time of the study. Williams and Hensel (1995) examined only elderly participants assuming they would be more attentive to DTC ads than a younger sample. Morris et al., (1989; 1985) included an equal number of sufferers and non-sufferers which may be similar to high versus low involved participants, assuming sufferers would be more involved than non sufferers. It may be more accurate to categorize participants as either high or low involved rather than sufferers versus non-sufferers. This may lead to a better and more in depth understanding of consumer information processing of DTC ads.

Based on the literature review, Figure 2 presents the proposed model for this research.

Figure 2. The Model



The present study included specific rather than general risk information. General risk information has been criticized for being uninformative and not providing the consumer with important facts about the drug. Based on previous studies (Morris et al., 1989) general risk information does not adequately inform or motivate consumers to search for more information. DTC advertising of prescription drugs is required by the FDA to include specific information about the potential side effects, rather than general risk information. Therefore, the present study included specific risk information, which is defined as health warnings such as precautions or potential side effects that may occur while taking the advertised drug. (See appendix D for list of risk and benefit information in ad). The present study defines consumer's level of involvement as "an individual, internal state of arousal with intensity, direction and persistence properties" (Andrews et al., 1990).

7. Research Hypotheses

7.1 Description of Present Study

The present study is a 2x3 in between-subjects experiment. The two independent variables are participant's level of involvement and amount of risk information in a prescription drug ad. Participant's level of involvement was manipulated in order to have high and low involved participants. Three different target ads were developed each with a different ratio of benefit to risk information. For instance the high risk ad contained more risk information in comparison to benefit information; the low risk ad contained a greater amount of benefit information in comparison to risk information; and the control condition had an equal amount of benefit and risk information. The four dependent variables are participant's recall of ad message content, attitude towards the ad and brand, and behavioral intentions.

Based on previous studies of participant's attitude towards varying amounts of risk information in prescription drug ads, the present study will differ in that the participant's level of involvement is manipulated.

7.2. Level of Involvement

The first hypothesis is a manipulation check of the involvement manipulation. Therefore, participants receiving the high involvement manipulation, which instructed the participant to imagine that someone close to them is suffering of seasonal allergies and has asked the participant to search for remedies, should be more involved with the ad than participants having received the low involvement manipulation, which simply instructed the participants to read the ads as they would in a normal setting.

H 1 (Involvement): Regardless of the risk content, participants receiving the high involvement manipulation will be significantly more involved with the ad than participants receiving the low involvement manipulation.

The following hypothesis involves how participants level of involvement is affected depending on the risk content of the ad. Hypothesis 2a examines highly involved participants, and hypothesis 2b examines low involved participants.

According to past studies of fear appeals, consumers exposed to such ads tend to tune them out if they perceive the ad as too negative (Keller and Block, 1996; Henthorne et al., 1993). In such cases they will not elaborate on the message and this in turn inhibits message persuasiveness. In the present study the overwhelming amount of potential side effects in the target ads will counter the effects of the involvement manipulation. Therefore, regardless of the high involvement manipulation, highly involved participants will be more likely to tune out high risk ads than highly involved participants exposed to ads containing little negative information in comparison to the benefit information.

H 2a: Highly involved participants exposed to a high risk ad will be significantly less involved with the ad than highly involved participants exposed to a low risk ad.

Unlike highly involved participants, low involved participants will not differ in their level of involvement with the ad regardless if the ad is a high or low risk ad. Since they are already low involved with the ad, the high content of risk information will not have the same effect as with highly involved participants.

H 2b: No difference in level of involvement will exist between low involved participants exposed to a high risk ad and low involved participants exposed to a low risk ad.

Hypothesis 3 examines if high and low involved participants differ when exposed to either a high risk ad (H3a) or low risk ad (H3b).

Following from hypothesis 2a that highly involved participants will tune out the ad message when exposed to a high risk ad no difference in level of involvement should be observed between high and low involved participants exposed to a high risk ad.

H 3a: No difference in level of involvement will exist between high and low involved participants exposed to a high risk ad.

A low risk ad should have no effect on participants' level of involvement. Therefore, it is expected that participants receiving the high involvement instructions should be more involved with the low risk ad than participants receiving the low involvement instructions exposed to the low risk ad.

H 3b: Highly involved participants exposed to a low risk ad will be significantly more involved with the ad than low involved participants exposed to a low risk ad.

7.3. D.V: Recall

According to past studies (Keller and Block, 1996; Henthorne et al., 1993), a consumer who is highly involved with an ad will pay a greater amount of attention to the ad, thus greater cognitive effort will be made to understand and elaborate on the message content of the advertisement (Zhang and Buda, 1999; Petty et al., 1983). Studies have established an association between the amount of cognitive effort made and the amount of information recalled (Gardner et al., 1985; Petty et al., 1983). Participants that are highly involved with the message content of the ad are expected to recall a greater

amount of information than low involved participants. Therefore, the expected relationship between high and low involved participants for recall is:

H4: Regardless of the amount of risk information present in the prescription ad, highly involved participants will recall more information than low involved participants.

Fear appeals studies have found that ads containing too great an amount of what the consumer may regard as negative information causes the consumer to tune out the ad and therefore pay less attention to the ad message (Keller and Block, 1996; Henthorne et al., 1993). Therefore, it expected that participants will recall less of the high risk ads.

H 5: Regardless of participants' level of involvement, participants exposed to a high risk ad will recall less information than participants exposed to a low risk ad.

Hypothesis 6 examines how high (H6a) and low involved (H6b) participants' recall of the ad message, is affected by their level of involvement and risk content of the ad.

Based on previous studies of fear appeals (Keller and Block, 1996; Henthorne et al., 1993), consumers exposed to a high content of negative information will not elaborate on the message. It is expected that highly involved participants exposed to a high risk ad will not elaborate on the ad message and recall less of the ad than highly involved participants exposed to a low risk ad.

H 6a: Highly involved participants exposed to a high risk ad will recall significantly less than highly involved participants exposed to low risk ad.

Low involved participants will not be attentive to the ad message, therefore, regardless if the ad they are exposed to is a low or high risk ad, in both cases low involved participants will recall little of the ad.

H 6b: No difference will exist for the amount of information recalled between low involved participants exposed to a high risk ad and low involved participants exposed to a low risk ad.

Hypothesis 7 examines if any difference exist between high and low involved participants for recall of ad message when exposed to either a high risk ad (H7a) or a low risk ad (H7b).

Due to the fact that highly involved participants will tune out the ad message when exposed to a high risk ad, their recall should be similar to low involved participants exposed to a high risk ad. Therefore, no difference in recall should be observed between these two groups of participants.

H 7a: No difference will exist for the amount of information recalled between highly involved participants exposed to a high risk ad, and low involved participants exposed to a high risk ad.

Studies have shown that highly involved consumers recall more of an ad message than low involved consumers (Gardner et al., 1985; Petty et al., 1983). Therefore, highly involved participants exposed to a low risk ad are expected to recall more information than low involved participants exposed to a low risk ad.

H 7b: Highly involved participants exposed to a low risk ad will recall significantly more information than low involved participants exposed to a low risk ad.

7.4. D.V: Attitude Towards the Ad

Regardless of the risk content, highly involved participants may have a different attitude towards the ad than low involved participants. A highly involved participant is more attentive to the ad message, whereas a low involved participant is relying on peripheral cues to formulate an attitude towards the ad. Therefore, a difference between high and low involved participants is expected in terms of their attitude towards the ad.

H 8: Difference in attitude towards the ad will exist between highly involved and low involved participants, regardless of the risk content.

Studies have indicated that consumers perceive ads containing too much risk information as irritating (Morris et al., 1985). Based on such findings, regardless of the participants' level of involvement participants will have a more positive attitude towards a low risk ad than a high risk ad.

H9: Regardless of participants' level of involvement participants exposed to a low risk ad will have a more positive attitude towards the ad than participants exposed to a high risk ad.

Hypothesis 10 examines how high (H10a) and low involved (H10b) participant's attitude towards the ad, is affected by their level of involvement and risk content of the target ads.

Fear appeals studies have found that consumers exposed to such ads have a negative attitude towards the ads (Keller and Block, 1996). Therefore, a highly involved participant exposed to a high risk ad will have a negative attitude towards the ad in comparison to a highly involved participant exposed to a low risk ad.

H 10a: Highly involved participants exposed to a high risk ad will have a more negative attitude towards the ad than highly involved participants exposed to a low risk ad.

Low involved participants may initially be expected to perceive no differences between the high and low risk conditions. However, low involved participants may be persuaded by peripheral cues (Zhang and Buda, 1999; Gardner et al., 1985; Petty et al., 1983). The consumer will not consider the pros and cons of the issue, but rather be influenced by cues that are not necessarily issue relevant. In this condition a participant may apply the frequency heuristic (Alba and Marmorstein, 1987), and be influenced by the fact that the product has a greater amount of potential side effects than potential benefits. The potential danger in taking the advertised drug will make enough of an impression on them, causing them to have a more negative attitude towards a high risk ad than a low risk ad.

H 10b: Low involved participants exposed to a high risk ad will have a more negative attitude towards the ad than low involved participants exposed to a low risk ad.

Hypothesis 11 examines if any difference between high and low involved participants may exist, in their attitude towards a high risk ad (H11a) or low risk ad (H11b).

As already mentioned in hypothesis 10a, highly involved participants exposed to a high risk ad will have a negative attitude towards the ad. The same is expected of low involved participants exposed to a high risk ad as mentioned in hypothesis 10b. Therefore, no difference in attitude towards the ad is expected between these two groups.

H 11a: No significant difference in attitude towards the ad will exist between highly involved participants exposed to a high risk ad and low involved participants exposed to a high risk ad.

In comparing high and low involved participants exposed to the low risk ad, it is expected that low involved participants will have a more positive attitude towards the ad than highly involved participants. Highly involved participants will perceive the low risk ad as uninformative, whereas low involved participants will be left with the impression that the benefit information outweighed the risk information in the ad.

H 11b: Low involved participants exposed to a low risk ad will have a significantly more positive attitude towards the ad than highly involved participants exposed to a low risk ad.

7.5. D.V: Attitude Towards the Brand

Studies have indicated that attitude towards the ad influences attitude towards the brand (Gardner, 1985; Mitchell and Olson, 1981). Frequently, a positive attitude towards the ad will lead to a positive attitude towards the brand. The expected relationships for attitude towards the brand will be the same as those for attitude towards the ad.

H 12: Difference in attitude towards the brand will exist between highly involved and low involved participants, regardless of the risk content.

H 13: Regardless of participants' level of involvement participants exposed to a low risk ad will have a more positive attitude towards the brand than participants exposed to a high risk ad.

H 14a: Highly involved participants exposed to a high risk ad will have a more negative attitude towards the brand than highly involved participants exposed to a low risk ad.

H 14b: Low involved participants exposed to a high risk ad will have a more negative attitude towards the brand than low involved participants exposed to a low risk ad.

H 15a: No significant difference in attitude towards the brand will exist between highly involved participants exposed to a high risk ad and low involved participants exposed to a high risk ad.

H 15b: Low involved participants exposed to a low risk ad will have a significantly more positive attitude towards the brand than highly involved participants exposed to a low risk ad.

7.6. D.V: Behavioral Intentions

It is more likely that consumers suffering from the advertised ailment will be more inclined to be attentive to DTC advertising of prescription drugs than non-sufferers. Therefore, highly involved participants are expected to be more attentive to the ad message than low involved participants.

H 16: High, and not low involved participants, would be willing to read DTC ads in a natural setting.

A highly involved participant exposed to a low risk ad will have a more positive attitude towards the ad and brand than highly involved participants exposed to a high risk ad or a low involved participant exposed to a high risk ad. Studies have found that a more positive attitude towards DTC advertising was related to intention to seek additional information (Williams and Hensel, 1995). Therefore, participants with a more positive attitude towards the ad and brand are more likely to search for more information about the advertised product.

H 17: Highly involved participants exposed to a low risk ad will be more willing to search for more information than low involved participants and highly involved participants exposed to a high risk ad.

Similar to hypothesis 17, highly involved participants exposed to a low risk ad will have a positive attitude towards the ad and brand and are therefore more likely to ask their doctor questions concerning the advertised drug.

H 18: Highly involved participants exposed to a low risk ad will be more willing to contact their doctor than low involved participants and highly involved participants exposed to a high risk ad.

Methodology

1. Experimental Design

The present study is a 2 (involvement manipulation) x 3 (risk manipulation) between-subjects factorial design. This yielded six conditions. The involvement manipulation consisted of high versus low involvement. The risk manipulation consisted of a high risk, low risk, and control ad. The dependent variables were recall, attitude towards the ad, brand and behavioral intentions.

2. Sample

A total of 191 undergraduate students from the Faculty of Commerce and Administration of Concordia University participated in the study. Thirty-five students were included in the pretest and 156 were included for the actual experiment.

3. Questionnaire

Participants were given a questionnaire as well as a consent form, as the cover page, to complete (see Appendix A for consent form and questionnaire). The first page assessed characteristics of each participant (gender, age, if they suffer from seasonal allergies etc.) Participants were then given instructions as to how to complete the questionnaire.

The first question measured the involvement manipulation. Based on Zaichkowsky's Personal Involvement Inventory (1985), five of the twenty items believed to be the most relevant to the study were chosen. Each of the five items was a seven-point bipolar scale, with a score of one meaning low involvement and a score of seven

high involvement. The sum of the five items was the involvement measure for each participant.

Recall in the present study is defined as the amount of risk and benefit information correctly remembered from the target ad. Recall was measured by twelve statements, to which participants were asked if the statement was or was not present in the ad. Following each statement participants were asked how confident they were of their response on a one to seven scale: one being not sure at all and seven being extremely sure. The first six statements dealt with benefit information and following six with risk information.

Attitude towards the ad is defined in the present study as the predisposition to respond in a favorable or unfavorable manner to a particular advertisement during a particular exposure occasion (based on Lutz, 1985, in Burton and Lichtenstein, 1988). Attitude towards the ad was measured using Holbrook and Batra's (1987) scale. The scale consisted of four seven-point bipolar items. A final attitude towards the ad measure was an average of the four items.

Attitude towards the brand is defined in the present study as the predisposition to respond in a favorable or unfavorable manner to a particular brand during a particular exposure occasion (based on Lutz, 1985, in Burtan and Lichtenstein, 1988). Attitude towards the brand was measured using Laczniak and Muehling's (1993) scale. The scale consisted of five seven-point bipolar items. A final attitude towards the brand measure was an average of the five items.

The risk manipulation was then measured by asking participants to choose a value from one to seven as to how much risk versus benefit information they believe the target

ad contained. Therefore, a value of one meaning they perceived the ad more risky than beneficial, and a value of seven meaning they perceived the ad more beneficial than risky.

The present study defines behavioral intentions as the willingness of the participant to read the advertisement, to ask a doctor for additional information and to search for more information through other sources. Participants' behavioral intentions were measured using Everett's (1991) scale. Participants were asked nine questions measuring what their behavioral intentions would be if they were to see the target ad in a magazine. Participants were to choose a value from one to seven; one being they definitely would not display the behavior and seven being they definitely would display the behavior. These nine questions measured three different types of behavioral intentions. The first question dealt with the participant actually reading and paying attention to DTC drug ads. The following five questions measured the participant's willingness to obtain more information from doctors. For instance, would seeing these ads make them want to ask their doctor for further information? The final three questions measured the willingness of the participant to engage in information search through other sources, such as calling 1-800 numbers, visiting websites or asking friends and family if they have ever used the advertised drug.

Attitude towards advertising in print media was assessed using Shavitt, Lowrey and Haefner's (1998) scale. This section consists of thirteen questions to which participants have to respond on a seven-point bipolar item.

The final section measures participants' attitudes towards DTC advertising using Perri and Nelson's (1987) scale. Participants are given five statements to which they must answer on a seven-point bipolar item with endpoints strongly disagree/ strongly agree.

4. Pretests

Initially a pretest was conducted with 30 individuals in order to assess the likeability of seven mock prescription drug ads. The original names of the prescription drugs on which the ads were based on, were changed in order to avoid any familiarity a participant may already have with the existing drugs. Based on results, ads that elicited the most negative responses were eliminated. A final four filler ads were selected as well as one target ad (see Appendix B for ads).

In order to develop effective involvement manipulations that would be relevant to the sample, one on one interview were conducted with seven individuals. Four Concordia students and three non-students within the appropriate age category were asked several questions about various involvement manipulations (see Appendix C for a summary of interviews). The interviews were conducted in order to have a better understanding of what would lead participants to become involved with the present study. Based on the interviews, high and low involvement manipulations were chosen.

A final pretest was conducted at one of Concordia's undergraduate commerce summer classes. The pretest sample consisted of 35 students, ages ranging from 19 to 27. The pretest was carried out as the actual experiment. Results indicated that both risk and involvement manipulations were significant (see Appendix D for manipulation checks of pretest).

5. Development of Involvement Manipulation

Several high and low involvement manipulations were created. Based on interviews a final two were selected (see Appendix E for involvement manipulations). There were aspects of the high involvement manipulation that may have caused an individual to become more involved with the ads. First, participants were asked to imagine someone close to them is suffering from seasonal allergies. This made the instructions more personal and relevant to the participants. Second, participants were asked to search for information concerning seasonal allergies. These specific instructions caused the participant to become more attentive, since they had a specific task to carry out. Low involvement participants were simply told to look through the ads as they would, browsing through a magazine. The low involvement instructions were not personal and "browsing through a magazine" is an activity that does not require a lot of attention.

6. Development of Risk Manipulation

The three target ads (3 risk conditions) differed in the amount of risk information relative to the amount of benefit information that was presented to the participant (Morris, 1990; Morris et al., 1985). Prior to the development of the target ad a drug data sheet was created. This consisted of 6 beneficial promotions and 6 risk promotions (see Appendix F for drug data sheet). All prescription drug ads are required by law to include both side effects and benefits. To create ads that are as realistic as possible both such pieces of information are included in the ads. Therefore, the ratio of risk information to

benefit information was manipulated. Specific risk information was used since general may not have been perceived as informative (Morris, 1990; Morris et al., 1985).

Table 6.1 Description of Risk Manipulation

Target ads	*Description of experimental manipulations*
(1) High risk ad	Six statements of risk information: Two statements of benefit information.
(2) Low risk ad	Two statements of risk information: Six statements of benefit information.
(3) Control	Six statements of risk information: Six statements of benefits information.

The target ad consisted of a picture depicting two young individuals. The picture was chosen for its relevance to the sample, which consisted mainly of young adults. The chosen ailment was seasonal allergies, since this is a common ailment among young female and male adults. Furthermore, seasonal allergies are a non-emotional ailment and seasonal allergy drugs are one of the most advertised drugs by pharmaceutical manufacturers.

All ads had similar layouts; the picture was on the top half page with the ad message on the bottom half. All pictures were in color, and all filler ads had the same font size. The target ad had the same font size except for the drug's name, which was slightly larger. Initially seven ads in total were to be used in the study, but pretests indicated that participants felt it was too much information and had difficulty in recalling the target ad; therefore five ads in total were used.

7. Procedure

Classes from the 2002 summer undergraduate class schedule were randomly selected for testing. Upon arrival at the classroom, the researcher introduced herself and gave a short introduction to the study. Students were told the study was for an M.Sc thesis, and that the researcher was interested in consumers' reactions to prescription drug advertising. Participants were told the approximate duration of the experiment (20 minutes) and the right to know the results of the study once it was completed.

Students were then given instructions to the study. Each participant was given two booklets. One consisted of the five ads with the involvement manipulation instructions as the cover page. The second booklet was the questionnaire with a consent form as the cover page. Participants were told to examine the ad booklet first and then complete the questionnaire without referring back to the ad booklet once they had begun the questionnaire. Booklets were distributed so that students were randomly assigned to one of the six conditions.

During the experiment the researcher respondent to any questions and checked to ensure that students did not refer back to the ad booklet while completing the questionnaire.

Results

1. Manipulation Checks

A one-way analysis of variance (ANOVA) was performed in order to measure if the involvement and risk manipulations were significant. The ANOVA for both manipulations were found to be significant. For the involvement manipulation the ANOVA yielded an $F(1, 155) = 14.30$ ($p < 0.05$). For the risk manipulation, the ANOVA resulted in $F(2, 155) = 18.70$ ($p < 0.05$).

2. Reliability Analysis

Reliability analysis was conducted by measuring the Cronbach Alpha of the involvement, attitude towards the ad and brand scales. The Cronbach Alpha for the involvement manipulation scale was significant at 0.86. Attitude towards the ad was significant at alpha 0.93 and, attitude towards the brand was significant at alpha 0.92.

3. Descriptive Statistics of Sample

The following table is a summary of the sample characteristics.

Table 3. 1. Characteristics of Sample

Variable	Group 1 HI Inv/ Control	Group 2 HI Inv/ HI Risk	Group 3 HI Inv/ LO Risk	Group 4 LO Inv/ Control	Group 5 LO Inv/ HI risk	Group 6 LO Inv/ LO Risk
GENDER	Male: 23% Female: 77%	Male: 38.5% Female: 61.5%	Male: 42% Female: 58%	Male: 38.5% Female: 61.5%	Male: 46% Female: 54%	Male: 34.5% Female: 65.5%
AGE	Avg: 26.5 Min: 20 Max: 33	Avg: 24 Min: 19 Max: 36	Avg: 25.3 Min: 18 Max: 38	Avg: 24.8 Min: 19 Max: 36	Avg: 25.7 Min: 19 Max: 35	Avg: 25.2 Min: 19 Max: 33
LANGUAGE	English: 38.5 % French: 7.7 Other: 53.8	E: 34.6 % F: 3.8 O: 61.6	E: 38.5 % F: 11.5 O: 50	E: 27 % F: 15.4 O: 57.6	E: 27 % F: 3.8 O: 69.2	E: 65.3 % F: 7.7 O: 27
Do you or have you ever suffered from seasonal allergies (S/A)?	YES: 38.5 % NO: 61.5	YES: 15.4 % NO: 84.6	YES: 34.7 % NO: 65.3	YES: 23 % NO: 77	YES: 38.5 % NO: 61.5	YES: 27 % NO: 73
Does anyone in your family suffer from S/A?	YES: 34.6 % NO: 65.4	YES: 23 % NO: 77	YES: 46 % NO: 54	YES: 34.6 % NO: 65.4	YES: 38.5 % NO: 61.5	YES: 30.8 % NO: 69.2

4. Analysis of Dependant Variables

The following section is a summary of the analysis conducted on the following variables: (1) Participant's overall level of involvement, (2) Information recalled, (3) Attitude towards the ad, (4) Attitude towards the brand, and (5) Behavioral intentions. Analysis was conducted using one way analysis of variance (ANOVA) and t-tests.

The following is an ANOVA table of the significant dependent variables for which differences between the six conditions existed.

Table 4. 1. Significant Dependant Variables when Sample Categorized as High Versus Low Involvement

		Sum of Squares	df	Mean Squares	F Value
Involvement	Between Groups	1145.62	5	229.12	
	Within Groups	8099.15	150	54.00	4.24*
	Total	9244.77	155		
Information Recalled	B-G	76.44	5	14.89	
	W-G	599.00	150	4.00	3.73*
	T	673.44	155		
Attitude Towards Brand	B-G	16.30	5	3.26	
	W-G	178.31	150	1.20	2.73**
	T	194.62	155		

* $p < .01$, ** $p < .05$

4.1. Level of Involvement

The following table includes the mean involvement values as well as the standard deviations for each condition.

Table 4. 2. Mean Involvement Values for each Condition

	CONTROL	HIGH RISK	LOW RISK	
HI INV	GROUP 1 M= 20.19 Std. Dev.= 8.20	GROUP 2 M= 16.08 Std. Dev.= 6.39	GROUP 3 M= 20.08 Std. Dev.= 7.06	 M= 18.78 S.D: 7.42
LO INV	GROUP 4 M= 13.85 Std. Dev.= 6.63	GROUP 5 M= 15.65 Std. Dev.= 8.88	GROUP 6 M= 13.38 Std. Dev.= 6.57	 M= 14.29 S.D: 7.41
	M= 17.02 S.D: 8.05	M= 15.87 S.D: 7.66	M= 16.73 S.D: 7.55	M= 16.54 S.D: 7.72

Main Effects

H 1 (Involvement): Regardless of the risk content, participants receiving the high involvement manipulation will be significantly more involved with the ad than participants receiving the low involvement manipulation.

A t-test analysis indicates that highly involved participants (groups 1, 2, and 3) are significantly more involved with the ad than low involved participants, $t(150) = 3.81$ ($p < 0.01$). Therefore hypothesis 1 is supported.

Interaction Effects

H 2a: Highly involved participants exposed to a high risk ad will be significantly less involved with the ad than highly involved participants exposed to a low risk ad.

A t-test analysis indicates that highly involved participants exposed to a high risk ad (group 2) are significantly less involved with the ad than highly involved participants exposed to a low risk ad (group 3), $t(150) = -1.96$ ($p < 0.05$). Therefore, hypothesis 2a is supported.

H 2b: No difference in level of involvement will exist between low involved participants exposed to a high risk ad and low involved participants exposed to a low risk ad.

A t-test analysis indicates that no significant difference in level of involvement exists between low involved participants exposed to a high risk ad (group 5) and low involved participants exposed to a low risk ad (group 6), $t(150) = 0.27$ ($p > 0.05$). Therefore, hypothesis 2b is supported.

H 3a: No difference in level of involvement will exist between high and low involved participants exposed to a high risk ad.

A t-test analysis indicates that no significant difference existed between high (group 2) and low (group 5) involved participants for their level of involvement with the ad, $t(150) = 0.21$ ($p > 0.05$). Therefore, hypothesis 3a is supported.

H 3b: Highly involved participants exposed to a low risk ad will be significantly more involved with the ad than low involved participants exposed to a low risk ad.

Highly involved participants exposed to a low risk ad (group 3) were more involved with the ad than low involved participants exposed to a low risk ad (group 6), $t(150) = 3.28$ ($p < 0.01$). Hypothesis 3b is supported.

Table 4. 3. Hypothesis Testing for Level of Involvement

	Hypotheses	Results
H1	Regardless of the risk content, participants receiving the high involvement manipulation will be significantly more involved with the ad than participants receiving the low involvement manipulation.	Supported
H2a	Highly involved participants exposed to a high risk ad will be significantly less involved with the ad than highly involved participants exposed to a low risk ad.	Supported
H2b	No difference in level of involvement will exist between low involved participants exposed to a high risk ad and low involved participants exposed to a low risk ad.	Supported
H3a	No difference in level of involvement will exist between high and low involved participants exposed to a high risk ad.	Supported
H3b	Highly involved participants exposed to a low risk ad will be significantly more involved with the ad than low involved participants exposed to a low risk ad.	Supported

4.2. Recall

The following table includes the mean recall values as well as the standard deviations of each condition.

Table 4. 4. Mean Recall Values for each Condition

	CONTROL	HI RISK	LO RISK	
HI INV	GROUP 1 M= 8.62 Std. Dev.= 2.19	GROUP 2 M= 6.88 Std. Dev.= 1.70	GROUP 3 M= 9.15 Std. Dev.= 2.24	 M= 8.22 S.D: 2.25
LO INV	GROUP 4 M= 8.08 Std. Dev.= 2.02	GROUP 5 M= 8.00 Std. Dev.= 1.77	GROUP 6 M= 8.04 Std. Dev.=2.01	 M= 8.04 S.D: 1.91
	M= 8.35 S.D: 2.10	M= 7.44 S.D: 1.81	M= 8.60 S.D: 2.18	M= 8.13 S.D: 2.08

Main Effects

H 4 (involvement): Regardless of the risk content, highly involved participants will recall more information than low involved participants.

A t-test analysis indicates that no significant difference exists between highly involved participants (groups 1, 2, and 3) and low involved participants (groups 4, 5, and 6) for the amount of information recalled, $t\ (150) = 0.56\ (p > 0.05)$. Therefore, hypothesis 4 is not supported.

H 5 (risk): Regardless of participants' level of involvement, participants exposed to a high risk ad will recall less information than participants exposed to a low risk ad.

A t-test analysis indicates that participants exposed to a high risk ad (groups 2, and 5), recall significantly less than participants exposed to a low risk ad (groups 3 and 6), $t(150) = -2.94$ ($p < 0.01$). Hypothesis 5 is supported.

Interaction Effects

H 6a: Highly involved participants exposed to a high risk ad will recall significantly less than highly involved participants exposed to low risk ad.

Using t-test analysis highly involved participants (groups 2) recalled significantly less than highly involved participants exposed to a low risk ad (group 3), $t(150) = -4.10$ ($p < 0.01$). Therefore, hypothesis 6a is supported.

H 6b: No difference will exist for the amount of information recalled between low involved participants exposed to a high risk ad and low involved participants exposed to a low risk ad.

A t-test analysis indicates that no significant difference exists for amount of information recalled between low involved participants exposed to a high risk ad (group 5) and low involved participants exposed to a low risk ad (group 6), $t(150) = 0.97$ ($p > 0.05$). Hypothesis 6b is supported.

H 7a: No difference will exist for the amount of information recalled between highly involved participants exposed to a high risk ad, and low involved participants exposed to a high risk ad.

A t-test analysis indicates that highly involved participants exposed to high risk ad (group 2) recalled significantly less than low involved participants exposed to a high risk ad (group 5), $t(150) = -2.01$ ($p < 0.05$). Therefore, hypothesis 7a is not supported.

H 7b: Highly involved participants exposed to a low risk ad will recall significantly more information than low involved participants exposed to a low risk ad.

Highly involved participants exposed to low risk ad (group 3) recalled significantly more than low involved participants exposed to low risk ad (group 6), $t(150) = 2.01$ ($p < 0.05$). Therefore, hypothesis 7b is supported.

Table 4. 5. Hypothesis Testing for Recall

	Hypotheses	Results
H4	Regardless of the risk content, highly involved participants will recall more information than low involved participants.	Not Supported
H5	Regardless of participants' level of involvement, participants exposed to a high risk ad will recall less information than participants exposed to a low risk ad.	Supported
H6a	Highly involved participants exposed to a high risk ad will recall significantly less than highly involved participants exposed to low risk ad.	Supported
H6b	No difference will exist for the amount of information recalled between low involved participants exposed to a high risk ad and low involved participants exposed to a low risk ad.	Supported
H7a	No difference will exist for the amount of information recalled between highly involved participants exposed to a high risk ad, and low involved participants exposed to a high risk ad.	Not Supported
H7b	Highly involved participants exposed to a low risk ad will recall significantly more information than low involved participants exposed to a low risk ad.	Supported

4.3. Attitude Towards the Ad

The following table includes the mean values of attitude towards the ad as well as the standard deviations of each condition.

Table 4. 6. Mean Values for Attitude Towards the Ad

	CONTROL	HI RISK	LO RISK	
HI INV	GROUP 1 M= 4.93 Std. Dev.= 1.08	GROUP 2 M= 4.38 Std. Dev.= 1.11	GROUP 3 M= 4.45 Std. Dev.= 1.52	M= 4.59 S.D: 1.26
LO INV	GROUP 4 M= 4.82 Std. Dev.= 1.52	GROUP 5 M= 4.63 Std. Dev.= 1.49	GROUP 6 M= 4.18 Std. Dev.= 1.86	M= 4.54 S.D: 1.64
	M= 4.88 S.D: 1.30	M= 4.50 S.D: 1.30	M= 4.32 S.D: 1.69	M= 4.56 S.D: 1.45

Main Effects

H 8 (involvement): Difference in attitude towards the ad will exist between highly involved and low involved participants, regardless of the risk content.

A t-test analysis indicates that no significant difference exists between highly involved participants (groups 1, 2, and 3) and low involved participants (groups 4, 5, and 6) for their attitude towards the ad, $t\ (148) = 0.18\ (p > 0.05)$. Hypothesis 8 is not supported.

H9 (risk): Regardless of participants' level of involvement participants exposed to a low risk ad will have a more positive attitude towards the ad than participants exposed to a high risk ad.

A t-test analysis indicates that no significant difference exists between participants exposed to a high risk ad (groups 2 and 5), and participants exposed to a low risk ad (groups 3 and 6) for their attitude towards the ad, $t\ (148) = 0.65\ (p > 0.05)$. Hypothesis 9 is not supported.

Interaction Effects

H 10a: Highly involved participants exposed to a high risk ad will have a more negative attitude towards the ad than highly involved participants exposed to a low risk ad.

A t-test analysis indicates that no significant difference exists between highly involved participants exposed to a high risk ad (group 2) and highly involved participants exposed to a low risk ad (group 3), $t\ (148) = -0.19\ (p > 0.05)$. Therefore hypothesis 10a is not supported.

H 10b: Low involved participants exposed to a high risk ad will have a more negative attitude towards the ad than low involved participants exposed to a low risk ad.

A t-test analysis indicates that no significant difference exists between low involved participants exposed to a high risk ad (group 5) and low involved participants exposed to a low risk ad (group 6), $t\ (148) = 1.10\ (p > 0.05)$. Hypothesis 10b is not supported.

H 11a: No significant difference in attitude towards the ad will exist between highly involved participants exposed to a high risk ad and low involved participants exposed to a high risk ad.

Difference in attitude towards the ad between highly involved participants exposed to a high risk ad (group 2) and low involved participants exposed to a high risk ad (group 5) was not significant, $t(148) = -0.63$ ($p > 0.05$). Therefore hypothesis 11a is supported.

H 11b: Low involved participants exposed to a low risk ad will have a significantly more positive attitude towards the ad than highly involved participants exposed to a low risk ad.

No significant difference in attitude towards the ad existed between highly involved participants exposed to a low risk ad (group 3) and low involved participants exposed to low risk ad (group 6), $t(148) = 0.67$ ($p > 0.05$). Hypothesis 11b is not supported.

Table 4. 7. Hypothesis Testing for Attitude Towards the Ad

	Hypotheses	Results
H8	Difference in attitude towards the ad will exist between highly involved and low involved participants, regardless of the risk content.	Not Supported
H9	Regardless of participants' level of involvement participants exposed to a low risk ad will have a more positive attitude towards the ad than participants exposed to a high risk ad.	Not Supported
H10a	Highly involved participants exposed to a high risk ad will have a more negative attitude towards the ad than highly involved participants exposed to a low risk ad.	Not Supported
H10b	Low involved participants exposed to a high risk ad will have a more negative attitude towards the ad than low involved participants exposed to a low risk ad.	Not Supported
H11a	No significant difference in attitude towards the ad will exist between highly involved participants exposed to a high risk ad and low involved participants exposed to a high risk ad.	Supported
H11b	Low involved participants exposed to a low risk ad will have a significantly more positive attitude towards the ad than highly involved participants exposed to a low risk ad.	Not Supported

4.4. Attitude Towards the Brand

The following table includes the mean values of attitude towards the brand as well as the standard deviations for each condition.

Table 4. 8. Mean Values for Attitude Towards the Brand

	CONTROL	HIGH RISK	LOW RISK	
HI INV	GROUP 1 M= 4.95 Std. Dev.= 1.14	GROUP 2 M= 4.17 Std. Dev.= 0.95	GROUP 3 M= 4.78 Std. Dev.= 0.90	M= 4.63 S.D:1.05
LO INV	GROUP 4 M= 4.88 Std. Dev.= 0.75	GROUP 5 M= 4.44 Std. Dev.= 1.34	GROUP 6 M= 4.15 Std. Dev.= 1.34	M= 4.49 S.D: 1.20
	M= 4.91 S.D: 0.96	M= 4.30 S.D: 1.16	M= 4.47 S.D: 1.17	M= 4.56 S.D: 1.12

Main Effects

H 12 (involvement): Difference in attitude towards the brand will exist between highly involved and low involved participants, regardless of the risk content.

A t-test analysis indicates that no significant difference exists between highly involved participants (groups 1, 2, and 3) and low involved participants (groups 4, 5, and 6) for their attitude towards the brand, $t(149) = 0.80$ ($p > 0.05$). Therefore, hypothesis 12 is not supported.

H 13 (risk): Regardless of participants' level of involvement participants exposed to a low risk ad will have a more positive attitude towards the brand than participants exposed to a high risk ad.

A t-test analysis indicates that no significant difference exists between participants exposed to a high risk ad (groups 2 and 5), and participants exposed to a low risk ad (groups 3 and 6) for their attitude towards the brand, $t(149) = -0.75$ ($p > 0.05$). Hypothesis 13 is not supported.

Interaction Effects

H 14a: Highly involved participants exposed to a high risk ad will have a more negative attitude towards the brand than highly involved participants exposed to a low risk ad.

A t-test analysis indicates that highly involved participants exposed to a high risk ad (group 2) had a significantly more negative attitude towards the brand than highly involved participants exposed to a low risk ad (group 3), $t(149) = -2.0$ ($p < 0.01$). Therefore, hypothesis 14a is supported.

H 14b: Low involved participants exposed to a high risk ad will have a more negative attitude towards the brand than low involved participants exposed to a low risk ad.

A t-test analysis indicates that no significant difference exists between low involved participants exposed to a high risk ad (group 5) and low involved participants exposed to a low risk ad (group 6), $t(149) = 0.94$ ($p > 0.05$). Hypothesis 14b is not supported.

H 15a: No significant difference in attitude towards the brand will exist between highly involved participants exposed to a high risk ad and low involved participants exposed to a high risk ad.

No significant differences were observed between highly involved participants exposed to a high risk ad (group 2) and low involved participants exposed to a high risk ad (group 5), $t(149) = -0.88$ ($p > 0.05$). Therefore, hypothesis 15a is supported.

H 15b: Low involved participants exposed to a low risk ad will have a significantly more positive attitude towards the brand than highly involved participants exposed to a low risk ad.

Highly involved participants exposed to a low risk ad (group 3) had a significantly more positive attitude towards the brand than low involved participants exposed to a low risk ad (group 6), $t(149) = 2.05$ ($p < 0.05$). Therefore hypothesis 15b is not supported.

Table 4. 9. Hypothesis Testing for Attitude Towards the Brand

	Hypotheses	Results
H12	Difference in attitude towards the brand will exist between highly involved and low involved participants, regardless of the risk content.	Not Supported
H13	Regardless of the participant's level of involvement participants exposed to a low risk ad will have a more positive attitude towards the brand than participants exposed to a high risk ad.	Not Supported
H14a	Highly involved participants exposed to a high risk ad will have a more negative attitude towards the brand than highly involved participants exposed to a low risk ad.	Supported
H14b	Low involved participants exposed to a high risk ad will have a more negative attitude towards the brand than low involved participants exposed to a low risk ad.	Not Supported
H15a	No significant difference in attitude towards the brand will exist between highly involved participants exposed to a high risk ad and low involved participants exposed to a high risk ad.	Supported
H15b	Low involved participants exposed to a low risk ad will have a significantly more positive attitude towards the brand than highly involved participants exposed to a low risk ad.	Not Supported

4.5. Behavioral Intentions

The questions measuring behavioral intentions were separated into three categories: (1) Ad search, (2) Doctor contact, and (3) Information search. Questions involving 'ad contact', measured a participant's willingness to read and pay attention to the advertisement (one question); 'doctor contact' measured a participant's willingness to see and ask a doctor about the advertised drug (five questions); 'information search' measured the participant's willingness to seek additional information about the advertised drug from other sources such as family or manufacturer's website (three questions).

H 16: High, and not low involved participants, would be willing to read DTC ads in a realistic setting.

A one way ANOVA analysis indicates that no significant differences exist between the six conditions for ad search, $F(5, 155) = 0.05$ ($p > 0.05$). Therefore, hypothesis 16 is not supported.

H 17: Highly involved participants exposed to a low risk ad will be more willing to search for more information than low involved participants and highly involved participants exposed to a high risk ad.

A one way ANOVA analysis indicates that no significant differences exist between the six conditions for information search, $F(5, 155) = 0.74$ ($p > 0.05$). Therefore, hypothesis 17 is not supported.

H 18: Highly involved participants exposed to a low risk ad will be more willing to contact their doctor than low involved participants and highly involved participants exposed to a high risk ad.

A one way ANOVA analysis indicates that no significant differences exist between the six conditions for doctor contact, $F(5, 154) = 0.60$ ($p > 0.05$). Therefore, hypothesis 18 is not supported.

Table 4. 10. Hypothesis Testing for Behavioral Intentions

	Hypotheses	Results
H16	High, and not low involved participants, would be willing to read DTC ads in a realistic setting.	Not Supported
H17	Highly involved participants exposed to a low risk ad will be more willing to search for more information than low involved participants and highly involved participants exposed to a high risk ad.	Not Supported
H18	Highly involved participants exposed to a low risk ad will be more willing to contact their doctor than low involved participants and highly involved participants exposed to a high risk ad.	Not Supported

A factor analysis was conducted on the questions pertaining to behavioral intentions to further test if any significance may exist between the conditions. The principle component analysis was used to extract the factors.

Table 4. 11. The Rotated Component Matrix of Behavioral Intentions

	Component 1	Component 2	Component 3
Ad search 1	0.609		
Ad search 2	0.882		
Ad search 3	0.847		
Info. search 7		0.625	
Info. search 8		0.868	
Info. search 9		0.835	
Doctor contact 4			0.539
Doctor contact 5			0.728
Doctor contact 6			0.760
Cronbach Alpha	0.841	0.800	0.606

A one way ANOVA analysis was again conducted to measure any differences between the conditions based on the new sets of behavioral intentions. The first three questions of the questionnaire measured participant's willingness to read and discuss the advertisement. Again, no significant difference was obtained between the conditions for ad search, $F(5, 155) = 0.61$ ($p > 0.05$). Questions pertaining to participant's willingness to see and ask a doctor for information now consisted of three questions. A reliability analysis indicates that the removal of question six would increase the Cronbach Alpha to a significant value of 7.417. Therefore, the ANOVA analysis was conducted using the data of questions 4 and 5 only. Again, no significant difference was observed between the conditions, $F(5, 155) = 1.48$ ($p > 0.05$). The final three questions dealt with the participant's willingness to search for more information from other sources. ANOVA

analysis indicates no significant difference between the conditions, $F(5, 155) = 0.60$ ($p > 0.05$).

5. Summary of Results

The following table is a summary of the main effects and interaction effects of the study. More significant effects were observed when both involvement level and risk disclosure interact rather than the manipulation of either variable alone.

Level of involvement is included with the dependant variables. Though it was an independent variable, some of the participants' level of involvement with the ad changed depending on the risk disclosure in the ad.

Table 5. 1. Summary of Results

	Involvement	Recall	Attitude towards the Ad	Attitude Towards the Brand	Behavioral Intentions
Main Effect of Involvement	Main Effect				
Main Effect of Risk		Main Effect			
Interaction Effect between: Hi Inv/ Hi Risk (group 2) & Hi Inv/ Lo Risk (group 3)	Interaction Effect	Interaction Effect		Interaction Effect	
Interaction Effect between: Hi Inv/ Hi Risk (group 2) & Lo Inv/ Hi Risk (group 5)		Interaction Effect			
Interaction Effect between: Hi Inv/ Lo Risk (group 3) & Lo Inv/ Lo Risk (group 6)	Interaction Effect	Interaction Effect		Interaction Effect	
Interaction Effect between: Lo Inv/ Hi Risk (group 5) & Lo Inv/ Lo Risk (group 6)					

6. Participants' Attitude Towards the Media

Participants' attitude towards print media was assessed. 13 questions in total were used for this measure. Using principle component analysis, four components were extracted, measuring participants': (Component 1) Opinion as to how informative they generally perceive advertisements, (Component 2) Level of trust in advertisements, (Component 3) Opinion on the extent of government regulation that should be permitted on advertisements, (Component 4) General liking of advertisements.

Table 6. 1. Rotated Component Matrix of Attitude Towards the Media

	Component 1	Component 2	Component 3	Component 4
Question6	0.621			
Question 7	0.646			
Question 8	0.595			
Question 9	0.721			
Question 10	0.693			
Question 3		0.575		
Question 4		0.762		
Question 5		0.755		
Question 11			0.532	
Question 12			0.764	
Question 13			0.819	
Question 1				0.832
Question 2				0.773
Cronbach Alpha	0.709	0.583	0.588	0.638

ANOVA analysis was conducted only on the first component since the Cronbach Alpha was significant. Removing some questions of the remaining components would not create a Cronbach Alpha above the cut off point of 0.70. Therefore, participants' attitude towards the media, specifically how informative they generally perceive

advertisements, was measured using questions six to ten. The one way ANOVA analysis did not yield significant results, $F(5, 155) = 1.35$ ($p > 0.05$).

7. Participants' Attitude Towards DTC Advertising

Participants' attitude towards DTC advertising was assessed. Five questions were used to measure if any differences may have existed between the groups. An ANOVA analysis of all five questions indicated that no significant differences existed between the conditions, $F(5, 153) = 0.98$ ($p > 0.05$). Factor analysis using principle component analysis as the extraction method, yielded two components.

Table 7. 1. Rotated Component Matrix for Participants' Attitude Towards DTC Advertising

	Component 1	Component 2
Question 3	0.743	
Question 4	0.840	
Question 5	0.832	
Question 1		0.849
Question 2		0.758
Cronbach Alpha	0.741	0.473

One way ANOVA analysis was performed for questions three to four. No significant difference was observed between the conditions for their attitude towards DTC advertising, $F(5, 153) = 1.00$ ($p > 0.05$) even with this subset of questions.

8. Analysis Between Seasonal Allergy Sufferers and Non Sufferers

A one-way ANOVA analysis was performed to measure if any significant differences exist if the sample was to be separated into seasonal allergy sufferers versus non sufferers. Of the 156 participants, 29.5% of the participants have suffered from seasonal allergies. The following is an ANOVA table of the significant dependant variables.

Table 8. 1. Significant Dependant Variables when Sample Categorized as Sufferers versus Non-Sufferers

		Sum of Squares	df	Mean Squares	F Value
Involvement	Between Groups	652.66	5	130.53	
	Within Groups	8592.11	150	57.28	2.28**
	Total	9244.77	155		
Information Recalled	B-G	54.72	5	10.94	
	W-G	618.72	150	4.13	2.65**
	T	673.44	155		

* $p < .01$, ** $p < .05$

8.1. Level of Involvement

Main Effects

T-test analysis indicates that regardless of the amount of risk information contained in the target ads, participants suffering of seasonal allergies were significantly more involved with the ad than non-suffering participants, $t(150) = 2.91$ ($p < 0.01$).

Interactions

Seasonal allergy sufferers exposed to a high risk ad were significantly more involved with the ad than non-sufferers exposed to a high risk ad, $t(150) = 2.93$ ($p < 0.01$).

8.2. Information Recalled

Main Effects

Regardless if the participant is suffering of seasonal allergies, participants recalled less information when exposed to a high risk ad than a low risk ad, $t(150) = -2.73$ ($p < 0.01$).

Interactions

Non-suffering participants exposed to a low risk ad recalled significantly more information than non-suffering participants exposed to a high risk ad, $t(150) = -2.22$ ($p < 0.05$).

Discussion

Pharmaceutical manufacturers use of direct to consumer advertising is increasing every year (Brichaceck and Sellers, 2001). Since the 1980's researchers have been studying how this popular method of advertising prescription drugs, is perceived and accepted by consumers. The present researchers attempted to further understand how consumers react to DTC advertising, specifically consumers' information processing of risk information. Based on previous research, the present study differs such that consumers' level of involvement is included in the theoretical model. The present researchers examined how consumers' recall of information, attitude towards the ad, brand, and behavioral intentions were dependent on varying amounts of risk information and by their level of involvement with the ad. The following is a discussion of the study's results.

1. Level of Involvement

Though participants received a high or low involvement manipulation, the present study examined if and how varying amount of risk information in an ad affects the participants' level of involvement. The significance of the first hypothesis indicates that the manipulation did have the desired outcome: participants that were told to imagine someone close to them suffering from seasonal allergies and, their request for the participant to aid in their search of remedies, did influence the participant to become more involved with the target ad. Furthermore, participants that were simply told to read

the ads as they would in their own free time were not as involved as the high involvement participants.

The findings indicate that only highly involved participants exposed to a high risk ad were affected by the risk content in the target ad. For instance, as was expected low involved participants showed no difference in their level of involvement when exposed to either a high or low risk ad (H2b). Furthermore, a low risk ad had no affect on the participants' level of involvement for either high or low involved participants (H3b). Highly involved participants, exposed to a high content of risk information, is the only condition for which the risk content of an ad had an effect on participants' level of involvement (H2a and H3a). This will be further discussed in a following section on fear appeals (section six).

2. Recall

Many studies have established that a highly involved individual will display a greater amount of attention to an ad, product or situation, than a low involved individual (Andrews et al., 1990; Zaichkowsky, 1985). Furthermore, some researchers have established that the more attention being given to an ad, product or situation, the more a highly involved individual should recall about the ad, product or situation (Petty et al., 1983). It was expected that regardless of the risk content highly involved participants should recall more information than low involved participants (H4). Interestingly this was not observed in the present study. In terms of recall no difference existed between high and low involved participants, when risk content was not taken into account.

Hypothesis 5 states that regardless of participants' level of involvement, participants exposed to a high risk ad will recall less information than participants exposed to a low risk ad. This hypothesis was supported. Studies examining consumers response to fear appeals in advertising have shown that a high amount of negative information may cause consumers to ignore the ad and therefore, recall less of the ad message (Keller and Block, 1996).

Hypothesis 6b states that no difference in recall would be observed between low involved participants exposed to a high or low risk ad. This hypothesis is supported, indicating that a low involve participant, who is paying little attention to the ad, will recall little regardless of the information being predominantly risk or benefit information.

Low risk ads also had no affect on the participants' recall of information regardless if the participant is high or low involved (H7b). As was expected a highly involved participant recalls more information than a low involved participant when exposed to a low risk ad.

Hypotheses 6a, and 7a, are in regards to theories of fear appeals and will be further discussed in section six.

3. Attitude Towards the Ad

Only one of the six hypotheses regarding attitude towards the ad is supported: No difference in attitude towards the ad will be observed between high and low involved participants exposed to a high risk ad (H11a). This hypothesis is based on theories of fear appeals and will be further discussed in section six.

Limitations in the study may be the cause for the insignificant results regarding participants' attitude towards the ad.

4. Attitude Towards the Brand

The two hypotheses regarding the main effects of involvement (H12) and risk content (H13) for attitude towards the brand were not supported. Regardless of the risk content, high and low involved participants did not differ in their attitudes towards the brand. This may indicate that level of involvement is not related to participants' attitude towards the brand. For instance, a highly involved participant may be more attentive to an ad than a low involved participant but does not indicate in what direction their attitude towards the brand will be.

The decision heuristic, frequency knowledge, is defined as the "influence on consumer decisions by the mere number of positive and negative attributes associated with a brand or by the mere number of dimensions on which one brand outperforms another" (Alba and Marmorstein, 1987). Reliance on frequency information is strongest in cases in which the consumer is low involved with the ad. Based on the frequency knowledge theory it was expected that low involved participants, would base their attitude towards the ad and brand on the 'number' of promotional versus risk points. For example, when exposed to a high risk ad low involved participants will be left with the impression that the risks of the product outweighed the benefits and therefore, will be left with a negative impression of the ad and brand. Based on such rational it was expected that low involved participants will have a more positive attitude towards the low risk ad in comparison to the high risk ad. This hypothesis (H14b) was not supported. No

difference in attitude towards the brand was observed between low involved participants exposed to a high and low risk ad. These results may indicate that low involved participants are not applying the frequency knowledge heuristic, but rather are so inattentive towards the ad that it is making no impression on them at all.

Though some studies have found that consumers have a positive attitude towards DTC ads containing general or little risk information (Morris et al, 1989; 1984) other studies have shown that consumers tend to think that DTC ads do not provide consumers with any new information (Levy, 1999), or overshadow the potential side effects of the drug (Roth, 1996). Therefore, it was expected that the low risk ad would be perceived as uninformative and containing an unfair amount of benefit information in comparison to risk information. Though this advertised product may appear more appealing than that advertised by the high risk ad, it may nonetheless, appear as untrustworthy, as the promoter is simply trying to sell the product and not properly inform the consumer. Highly involved participants are expected to be more attentive and therefore require more information from the ad than low involved participants. It was expected that highly involved participants would perceive the low risk ad as uninformative.

Based on the frequency knowledge theory low involved participants were expected to perceive the low risk ad as the benefits outweighing the risks and therefore, left with a positive impression of the ad and brand. Therefore, low involved participants were expected to have a more positive attitude towards the brand advertised in a low risk ad than highly involved participants (H15b). Hypothesis 15b was not supported. Rather opposite results were obtained, such that highly involved participants had a more favorable attitude towards the brand advertised in a low risk ad than low involved

participants. This may be due to the fact that highly involved participants did not perceive the ad as uninformative and similar to previous studies participants tend to regard DTC ads containing less risk information positively (Morris et al., 1989). Low involved participants may not have been involved enough to have developed an opinion of the brand.

Hypotheses 14a and 15a are in regards to theories of fear appeals and will be further discussed in section six.

5. Behavioral Intentions

No significant differences were observed in the participants' behavioral intentions (H 16, 17, and 18). This may be due to the sample consisting mostly of participants in their early twenties. In general, younger individuals need less medical attention than older individuals. Therefore, actively searching for more health related information might not be a common practice for the present sample. An older sample may have yielded different results. Furthermore, participants may have perceived seasonal allergies as not a serious enough ailment to pursue remedies for.

6. Fear Appeal Theories

Many of the hypotheses that were formulated in the present study were based on theories of fear appeals used in advertising. The present study found that theories of fear appeals can be used to predict how consumers will react to high risk DTC ads. These hypotheses centered mainly on highly involved participants exposed to high risk ads (group 2).

6.1. Level of Involvement

Hypothesis 2a states that highly involved participants exposed to a high risk ad will be less involved with the ad than highly involved participants exposed to a low risk ad. When exposed to a high risk ad, highly involved participants will become less involved, this in turn will lead them to become similar in their level of involvement to low involved participant exposed to high risk ad (H3a). Both these hypotheses are supported.

As observed in previous studies of fear appeals in advertising (Keller and Block, 1996; Henthorne et al., 1993), cases in which consumers are exposed to a large amount of what they perceive as negative information in an ad, will disregard the ad. Their dislike of the information will cause them to ignore the advertisement. Therefore, when exposed to DTC ads containing too great an amount of risk information in comparison to promotional points, participants will disregard the ad, due to the fact that they perceive the negative information as too overwhelming. Furthermore, participants may believe that a product containing this many potential side effects is too risky a product to take and therefore, is not worth their attention.

6.2. Recall

Hypothesis 6a states that highly involved participants exposed to a high risk ad will recall significantly less than highly involved participants exposed to a low risk ad. When exposed to a high risk ad, highly involved participants will become less involved which in turn will cause them to recall less information. Highly involved participants will now behave as low involved participants exposed to a high risk ad and both high and low

involved participants will not differ in the amount of information they recalled (H7a). Both these hypotheses are supported.

Involvement studies (Gardner et al., 1985; Petty et al., 1983) have shown that low involvement with an ad may result in less information being recalled. In addition, fear appeal studies have shown that consumers recall less of ads when they contain a high amount of fear appeals (Keller and Block, 1996). Therefore, as found in the present study, high risk ads will cause a highly involved participant to become less involved with the ad, as well as recall less information.

6.3. Attitude Towards the Ad

Hypothesis 10a states that highly involved participants exposed to a high risk ad will have a more negative attitude towards the ad than highly involved participants exposed to low risk ad. Due to the fact that low involved participants will be applying the frequency knowledge heuristic and, have a negative attitude towards the high risk ad, no significant difference between low and highly involved participants should exist for their attitude towards the ad (H11a). Results indicate that hypothesis 10a is not supported. Highly involved participants showed no difference in their attitude towards the ad regardless if the ad was a high or low risk. Hypothesis 11a was supported, no difference was observed between high and low involved participants exposed to a high risk ad.

Of the six hypotheses regarding participants' attitude towards the ad, only hypothesis 11a was supported. Limitations in the study may be the cause for the insignificant results.

6.4. Attitude Towards the Brand

Hypothesis 14a states that highly involved participants exposed to a high risk ad will have a more negative attitude towards the brand than highly involved participants exposed to a low risk ad. Furthermore, due to the fact that low involved participants will have a negative attitude towards the brand in the high risk ad, due to low involved participants applying the frequency knowledge heuristic, no significant difference between low and highly involved participants should exist for their attitude towards the brand (H15a). Both these hypotheses are supported.

Too much risk disclosure gives a negative impression of the advertised product, as having too many potential side effects. Studies (Roth, 1996; Sheffet and Kopp, 1990) have shown that drugs containing too many potential side effects may not be good candidates for DTC advertising. Moreover, studies in fear appeals have shown that consumers view these ads negatively, therefore, it is expected that participants will view these products as too risky and not providing enough potential benefits. Our findings are consistent with the literature, such that highly involved participants had a negative attitude towards brands advertised in high risk ads.

7. Seasonal Allergy Sufferers versus Non Sufferers

Interestingly, more significant results were obtained when participants were categorized as high versus low involved as opposed to sufferers versus non-sufferers. This supports the fact that categorizing participants based on their level of involvement with the ad may yield more interesting and accurate observations.

As was expected seasonal allergy sufferers were more involved with ad than non-sufferers. A participant suffering from the advertised ailment would more willing to learn more about the prescription drug than a participant who is not afflicted.

Non-sufferers exposed to a low risk ad recalled significantly more information than non-suffering participants exposed to a high risk ad. This may be due to the same principles used to explain consumers' reaction to fear appeals. The high amount of risk information may be have been negatively received by non-sufferers causing them to ignore the high risk ads in comparison to low risk ads. A sufferer may have been more accepting or accustomed to seeing the potential side effects of the drug.

In categorizing participants as sufferers versus non-sufferers it was observed that allergy sufferers were significantly more involved with the high risk ad than non-sufferers. As already mentioned sufferers were in general more involved with the ad than non-sufferers. Therefore, this is in contrast with the previous findings of high versus low involved participants, for which highly involved participants became low involved when exposed to a high risk ad. A plausible explanation may be that sufferers are generally more attentive to DTC ads concerning their ailment, and are not surprised or overwhelmed by the potential side effects.

8. Possible Limitations and Future Research

The present study included participants that were all students and were mostly in their twenties. Though the target ad used was for prescription allergy medicine, a drug that can be used by the present sample, prescription drug ads are generally geared towards middle to older aged adults. Future studies could include an older sample to examine if any differences may exist between younger and older consumers.

Participants' level of involvement was manipulated in order to create high and low involved participants. For the high involvement manipulation participants were instructed to imagine that someone close to them was suffering from seasonal allergies and, had asked them to search for information about available treatments. These instructions have a limitation such that, someone who is already suffering from seasonal allergies may be more involved than a non sufferer irrelevant of the instructions. Analysis indicated that participants in the present study who did suffer from seasonal allergies were in fact more involved than non sufferers. In future studies researchers may want to screen beforehand sufferers versus non sufferers, and create both a high and low involvement manipulation within these two groups.

The present study included an ad booklet that consisted of one target ad and four filler ads; no other material was included. Generally print prescription ads are found in magazines. Participants may have paid attention to these ads because there was no other material to distract them and, therefore this setting may seem unnatural. Future studies may want include short stories to make the material appear more realistic.

The questionnaire may have had a limitation as well. For instance, in measuring recall, participants were given several statements related to the target ad and were asked if the statements were or were not present in the ad. The higher the number of correct responses the greater the recall. This may not be a good indicator of recall because participants may read a statement that would normally appear in an allergy ad and therefore guess it was present in the target ad for such reason. Future studies may want to measure recall by asking participants to mention what they remember without any cues.

The present study only examined print ads. Researchers may examine the association of consumer involvement and risk content in TV ads. Criticism of DTC advertising of prescription drugs has been more prevalent for TV ads because promoters have the opportunity with print ads to include more information concerning the drug on the back of the page, whereas TV ads allow only 30 seconds to give as much information as possible to the consumer.

Future studies may include other consumer characteristics and how they relate to DTC advertising of prescription drugs. The present study only examined consumers' level of involvement, other constructs can include need for cognition and level of trust the consumer has toward prescription drug advertising.

9. Conclusion and Managerial Implications

The distinction between high and low involved consumers has provided some insight into how low involved consumers may react to DTC advertising. Though one may initially feel that low involved consumers are of little interest to the promoters, most consumers at some point will be required to learn more about a prescribed medication that they need. Therefore, low involved consumers are very much potential future customers. It is in the pharmaceutical manufacturers own interest to create ads in which consumers have a positive attitude towards, and perceive as trustworthy and reliable, since consumer's attitude towards DTC ads will in turn reflect on their attitude towards the pharmaceutical industry.

One of the major findings was the applicability of theories used in explaining consumer response to fear appeals to consumer response to high risk DTC ads. Highly

involved participants exposed to high risk ads behaved as low involved participants, such that their level of involvement became low, they recalled little of the ad and had a negative attitude towards the advertised brand. This finding contributes to the literature such that though prior studies have established that consumers dislike ads containing too much risk information, the present study only observed such behavior in high and not low involved participants.

In conclusion, the advertising of prescription drugs should be taken seriously by the pharmaceutical manufactures and consumers' response to such advertising should be examined extensively. Televised and print advertisements should contain accurate and detailed information about the product. Some critics believe that the 30 second time slot of television ads is not long enough to include all important facts about the drug (Roth, 1996). Therefore, some believe DTC ads should only be in print format. But even with the strict FDA regulations even print ads can be harmful to consumers if the information is not accurate. For instance, an advertisement being used today for the drug Paxil claims the drug is "non habit forming". Individuals having taken the medication have reported otherwise. Many websites have been posted detailing the horrific experiences of individuals attempting to quit Paxil (www. quitpaxil.org; www. paxilprogress.org). These individuals feel misled by their doctors and pharmaceutical manufacturers, which have insured them that going off Paxil, is possible and not difficult. Sites have also been developed to inform consumers of law offices that are conducting litigation against GlaxoSmithKline, the manufacturers of Paxil. Such ads are harmful to the reputation of pharmaceutical manufacturers and to the patient- doctor relationship.

Consumers are more proactive and knowledgeable today in matters concerning their well being and health. Therefore, pharmaceutical manufacturers should not attempt to advertise prescription drugs in a similar fashion as other goods. The present study, as well as others, suggests that consumers prefer to be informed about both the benefits in taking a prescribed drug as well as what the potential risks in taking the drug may be. This may entail that some drugs are better suited to DTC advertising than others. For instance advertisements for the weight loss drug, Xenical, had to be discontinued since the potential side effects were so numerous that consumers felt the risks in taking the medication far outweighed what the benefits may be.

The present study contributed to the existing literature of consumer's information processing of DTC advertisements. It established that some differences do exist between high and low involved individuals in the processing of DTC ads. Most importantly we observed that though a consumer may be low involved with a DTC ad, they nonetheless prefer ads that are informative and well balanced in informing the consumer of the product's potential benefits and risks. The development of DTC ads can be a good source of information for consumers and can help manufacturers increase awareness of their products. It is the responsibility of the manufacturer to ensure that their ads are informative and thereby achieve and maintain a positive reputation and long term success in the marketplace.

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APPENDICES

APPENDIX A: Consent Form and Questionnaire

CONSENT FORM TO PARTICIPATE IN RESEARCH

This is to state that I agree to participate in a program of research being conducted by Constantina Kavadas as part of her M.Sc in administration thesis under the supervision of Dr. Lea Prevel Katsanis of the department of marketing at Concordia University.

A. Purpose

I have been informed that the purpose of the research is to examine the effectiveness of various drug advertisements.

B. Procedure

The experiment will be conducted at Concordia University. I will browse through an ad booklet, at my own pace and then be required to complete a questionnaire, which should take approximately 15 minutes. I will be given the option to know the results of the study once it is completed.

C. Conditions of Participation

I understand that I am free to withdraw my consent and discontinue my participation at any time without negative consequences.

I understand that my participation in this study is confidential (the researcher will know, but will not disclose my identity).

I understand that the data from this study may be published.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print)_____

SIGNATURE_____

WITNESS SIGNATURE_____

DATE_____

Please respond to the following questions without referring to the advertisement booklet.
Do not browse through the questionnaire but rather answer each question consecutively.

Female Male

Age _____

First language: English French Native language_____

- Do you or have you ever suffered from seasonal allergies? Yes No

- Does anyone in your family suffer from seasonal allergies? Yes No

- Have you ever received prescribed medication for seasonal allergies? Yes No

-If yes, are you taking any now? _____

Section 1

The purpose of this section is to measure your interest in the **ad for Allonex, (seasonal allergies medication)**. We are interested in your first impressions, so respond quickly, giving your first impressions about the items. Please make sure you only give one answer per question.

Instructions

If you feel that the drug ad for seasonal allergies is very closely related to one end of the scale, you should place your check mark as follows:

Unimportant _x_: ___: ___: ___: ___: ___: ___ Important

Or

Unimportant ___: ___: ___: ___: ___: ___: _x_ Important

If you feel that the ad is quite closely related to one or the other end of the scale (but not extremely), you should place your check mark as follows:

Appealing ___: _x_: ___: ___: ___: ___: ___ Unappealing

Or

Appealing ___: ___: ___: ___: ___: ___: _x_ Unappealing

If you feel that the ad seems only slightly related (but not neutral) to one end of the scale, you should place your check mark as follows:

Uninterested ___: ___: _x_: ___: ___: ___: ___ Interested

Or

Uninterested ___: ___: ___: ___: _x_: ___: ___ Interested

Please complete the following questions; answer each item.

I perceive the **drug ad for Allonex** to be:

important ____: ____: ____: ____: ____: ____: ____ unimportant

of concern to me ____: ____: ____: ____: ____: ____: ____ of no concern to me

matters to me ____: ____: ____: ____: ____: ____: ____ does not matter to me

interested ____: ____: ____: ____: ____: ____: ____ uninterested

significant ____: ____: ____: ____: ____: ____: ____ insignificant

Please indicate if you do recall seeing the following statements in the **Allonex seasonal allergies drug ad**. Furthermore, choose the number that corresponds to how strongly convinced you are, of your answer: 1 being "I am not sure at all" and 7 being "I am extremely sure of my answer".

This drug relieves sneezing. Yes No

How strongly convinced are you that your answer is correct?

1 2 3 4 5 6 7
I am not sure at all of my answer — I am extremely sure of my answer

This drug relieves a runny nose. Yes No

How strongly convinced are you that your answer is correct?

1 2 3 4 5 6 7
I am not sure at all of my answer — I am extremely sure of my answer

This drug relieves nasal congestion. Yes No

How strongly convinced are you that your answer is correct?

1 2 3 4 5 6 7
I am not sure at all of my answer — I am extremely sure of my answer

This drug relieves seasonal allergy symptoms within 24 hours. Yes No

How strongly convinced are you that your answer is correct?

1 2 3 4 5 6 7
I am not sure at all of my answer — I am extremely sure of my answer

Tablets should be taken once daily. Yes No

How strongly convinced are you that your answer is correct?

1	2	3	4	5	6	7
I am not sure at all of my answer						I am extremely sure of my answer

Allergy symptoms relief last two hours. Yes No

How strongly convinced are you that your answer is correct?

1	2	3	4	5	6	7
I am not sure at all of my answer						I am extremely sure of my answer

This drug has the potential of causing such side effect as headaches. Yes No

How strongly convinced are you that your answer is correct?

1	2	3	4	5	6	7
I am not sure at all of my answer						I am extremely sure of my answer

This drug has the potential of causing such side effect as dry mouth. Yes No

How strongly convinced are you that your answer is correct?

1	2	3	4	5	6	7
I am not sure at all of my answer						I am extremely sure of my answer

Prolonged use of this drug may cause liver disease. Yes No

How strongly convinced are you that your answer is correct?

1	2	3	4	5	6	7
I am not sure at all of my answer						I am extremely sure of my answer

This drug causes drowsiness. Yes No

How strongly convinced are you that your answer is correct?

1	2	3	4	5	6	7
I am not sure at all of my answer						I am extremely sure of my answer

This drug has the potential of causing such side effect as nausea. Yes No

How strongly convinced are you that your answer is correct?

1	2	3	4	5	6	7
I am not sure at all of my answer						I am extremely sure of my answer

This drug has the potential of causing such side effect as back pain. Yes No

How strongly convinced are you that your answer is correct?

1	2	3	4	5	6	7
I am not sure at all of my answer						I am extremely sure of my answer

The purpose of this section is to measure your overall **attitude towards the drug ad Allonex**. Please respond to each of the four scales, never putting more than one check mark for each scale.

I dislike the ad ___: ___: ___: ___: ___: ___: ___ I like the ad

I react unfavorably to the ad ___: ___: ___: ___: ___: ___: ___ I react favorably to the ad

I feel negative towards the ad___: ___: ___: ___: ___: ___: ___I feel positive towards the ad

The ad is bad ___: ___: ___: ___: ___: ___: ___ The ad is good

The purpose of this section is to measure your **attitude towards the advertised product, Allonex**. Based on the information given in the ad, do you believe this prescription drug is:

Very bad ___: ___: ___: ___: ___: ___: ___ Very good

Worthless ___: ___: ___: ___: ___: ___: ___ Valuable

Very unfavorably ___: ___: ___: ___: ___: ___: ___Very favorably

Dislike very much ___: ___: ___: ___: ___: ___: ___ Like very much

Low quality ___: ___: ___: ___: ___: ___: ___ High quality

The **Allonex** ad included information of the possible risks involved in taking the medication as well as the potential benefits. Overall, would you say the drug in this ad is:

1	2	3	4	5	6	7
More **risky** than beneficial						More **beneficial** than risky

Section 2

Please respond to each of the following questions by circling one of the numbers that best corresponds to your answer.

If you happen to see the ad for Allonex, the seasonal allergies medication, in a magazine:

Would you read the ad carefully?

1	2	3	4	5	6	7
I definitely would not						I definitely would

Would you tell your doctor you had seen the ad?

1	2	3	4	5	6	7
I definitely would not						I definitely would

Would you discuss the drug's effectiveness with your doctor?

1	2	3	4	5	6	7
I definitely would not						I definitely would

Would you ask your doctor to prescribe *any* brand of seasonal allergy remedy to you?

1	2	3	4	5	6	7
I definitely would not						I definitely would

Would you ask your doctor to prescribe that specific drug for you?

1	2	3	4	5	6	7
I definitely would not						I definitely would

Would you change doctors if your doctor refused to prescribe it to you?

1	2	3	4	5	6	7
I definitely would not						I definitely would

Would you ask friends or family if they have been prescribed this drug?

1	2	3	4	5	6	7
I definitely would not						I definitely would

Would you call their 1-800 number?

1	2	3	4	5	6	7
I definitely would not						I definitely would

Would you visit their website?

1	2	3	4	5	6	7
I definitely would not						I definitely would

Section 3

Please respond to each of the following questions. All questions pertain to **ADVERTISING IN PRINT MEDIA.**

In general, do you like or dislike advertising in print media?

Dislike very much____: ____: ____: ____: ____: ____: ____Like very much

I like to look at most advertising I am exposed to.

Strongly disagree ____: ____: ____: ____: ____: ____: ____Strongly agree

Most advertising insults my intelligence.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

How often do you feel offended by advertisements?

Often____: ____: ____: ____: ____: ____: ____Never

How often have you felt misled by advertisements?

Often____: ____: ____: ____: ____: ____: ____Never

Most advertising is informative.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

In general, I feel that I can trust advertising.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

How often do you use information from advertising to help make your purchase decisions?

Often____: ____: ____: ____: ____: ____: ____Never

Generally, how confident are you in using information you see in an ad to make a purchase decision?

Not at all____: ____: ____: ____: ____: ____: ____Very

How comfortable are you in seeking additional information on an item directly through an address or phone number in an advertisement, for example, by using a 1-800 number?

Not at all____: ____: ____: ____: ____: ____: ____Very

What is your assessment of the amount of regulation which the government currently places on advertising?

Too little____: ____: ____: ____: ____: ____: ____Too much

Advertising regulation should be done by the advertising industry through its member associations rather than by the government.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

I think the government should put less effort into regulating the content of the advertising I see.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

Section 4

Please respond to each of the following questions. Choose only one response for each question.

Prescription drug information should come only from your doctor or pharmacist.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

Prescription medicines for serious medical problems should not be advertised to consumers.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

I think advertisements for prescription drugs provide me with information I have a right to know.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

Prescription drug advertisements could protect consumers from doctors and pharmacists who are not well informed.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

Prescription advertising gives me information that I think my doctor or pharmacist probably would not tell me.

Strongly disagree____: ____: ____: ____: ____: ____: ____Strongly agree

APPENDIX B: Advertisements

FILLER ADS

If you suffer from congestion, runny nose, and sneezing, Zorvast can help. You can't buy a more powerful cold remedy for long-lasting relief. Zorvast helps take away your cold symptoms without making you drowsy.

The most doctor recomended cold remedy
Zorvast

A sleepless night can make you irritable and impatient all day. Why deprive yourself of the sleep you need? Roban helps you get a restful sleep, while being non-addictive with a low occurence of side effects.

Ask your doctor or pharmacist to learn more about Roban.

If spring means wheezing, sneezing and generally feeling miserable, chances are you need Bupro. The prescription medication to help keep your asthma under control, allowing you to enjoy your day to its fullest.

Talk to your doctor to see if Bupro is right for you.

Headaches to muscle aches Xencar means faster relief. Get the unsurpassed power of Xencar, the only pain reliever with the power to keep pain at bay throughout the day.

For more information call toll free 1 800 786-5044
or visit our website at www.xencar.com

TARGET AD
CONTROL AD

Seasonal allergies can make you feel miserable. Allonex 180mg tablets have fexofenadine for non-drowsy relief. Allonex helps take away the sneezing, runny nose, and nasal congestion, so you can feel more like yourself again. Unlike other allergy medications, Allonex needs to be taken only once on a weekly basis, and is well tolerated with a low occurence of side effects.

Allonex is available by prescription only. If side effects do occur they may include headaches, dry mouth, and sore throat. Relief from symptoms may take several days to occur. Prolong use of Allonex may cause kidney and liver disease.

Check with your doctor before taking other medications, since Allonex may react adversely if taken with other drugs.

Talk to you doctor about
ALLONEX
Seasonal Allergy Relief

TARGET AD
LOW RISK

Seasonal allergies can make you feel miserable. Allonex 180mg tablets have fexofenadine for non-drowsy relief. Allonex helps take away the sneezing, runny nose, and nasal congestion, so you can feel more like yourself again. Unlike other allergy medications, Allonex needs to be taken only once on a weekly basis, and is well tolerated with a low occurence of side effects.

Allonex is available by prescription only. The occurence of headaches is a possible side effect. Relief from symptoms may take several days to occur.

Talk to your doctor about
ALLONEX
Seasonal Allergy Relief

TARGET AD
HIGH RISK

Seasonal allergies can make you feel miserable. Allonex helps take away the sneezing, and nasal congestion so you can feel more like yourself again.

Allonex is available by prescription only. If side effects do occur they may include headaches, dry mouth, and sore throat. Relief from symptoms may take several days to occur. Prolong use of Allonex may cause kidney and liver disease. Check with your doctor before taking other medications, since Allonex may react adversely if taken with other drugs.

Talk to your doctor about
ALLONEX
Seasonal Allergy Relief

APPENDIX C: Interviews with Participants

The following questions were asked to seven individuals to receive feedback and any suggestions for the involvement manipulations. Four of the individuals were Concordia students, and all seven were in their early twenties. Participants were first asked to read different versions of the high involvement manipulation and the low involvement manipulation.

Questions asked about each manipulation:

1) Based on these instructions do you feel the study must be important, and relevant to you?

2) Would you follow these instructions carefully?

3) Do you think these instructions (high involvement) would make you pay closer attention to the ads and questionnaire than the other instructions?

4) Do you have any suggestions as to what may be included in the instructions that would make you more attentive to the study?

APPENDIX D: Manipulation Checks for Pretest Sample

The pretest sample consisted of 35 participants: 17 low involved and 18 highly involved. A one-way analysis of variance (ANOVA) was performed in order to measure if the involvement and risk manipulations were significant for the pretest sample. The ANOVA for both manipulations were found to be significant. For the involvement manipulation the ANOVA yielded an $F(1, 35) = 8.91$ ($p < 0.01$). For the risk manipulation, the ANOVA resulted in $F(2, 35) = 11.17$ ($p < 0.01$).

APPENDIX E: Involvement Manipulations

High Involvement Manipulations

In this study we are interested in your perception of advertisements for prescription drugs. This type of research is important in understanding what should be permitted in advertising of medications. Your opinion is essential in the development of this type of advertising that inevitably affects the type and quality of healthcare information available to you and your loved ones.

Instructions

Imagine that a close family member has just told you that they appear to be suffering from seasonal allergies. They are extremely uncomfortable, and are experiencing a series of severely unpleasant symptoms. You are sorry to see a close relative suffer in such a way and this person has asked you to look for information on possible treatments for seasonal allergies before they consult their physician.

Please read each ad carefully looking for information that may help your relative. Once you have done so, please complete the questionnaire without referring to the ad booklet.

Low Involvement Manipulation

In this study we are interested in your perception of advertisements for prescription drugs. This type of research is important in understanding what should be permitted in advertising of medications. Your opinion is essential in the development of this type of advertising that inevitably affects the type and quality of healthcare information available to you and your loved ones.

Instructions

In this booklet there are five prescription drug ads. We would like you to look at each ad as if you were seeing it in a magazine at home. Though the present situation is different from being at home, please keep these instructions in mind as you browse through the ad booklet.

Once you have read each ad, please complete the questionnaire without referring back to the ads.

APPENDIX F: Drug Data Sheet

Promotional points

1) non-drowsy
2) relieves sneezing
3) relieves runny nose
4) relieves nasal congestion
5) taken once a week
6) well tolerated/ low occurrence of side effects

Risks

1) may cause headaches
2) may cause dry mouth
3) may cause sore throat
4) relief takes several days to occur
5) prolong use may kidney and liver disease
6) may react adversely with other drugs

APPENDIX G: Statistical Analysis Regarding Sample Characteristics

Statistical analysis for any significant differences between participants, were assessed for the following variables: (1) gender, (2) language, (3) suffering versus non suffering participants, (4) participants with a suffering family member, (5) participants having taken prescription allergy medication, and (6) participants taking prescription allergy medication at the time of the testing.

1. Gender

Of the 156 participants, 63 % were female and 37 % were male. The level of involvement between these two groups was significantly different, $F(1, 155) = 4.08$ ($p < 0.05$), such that female participants were more involved with the ad ($M = 17.49$, Std. Dev.= 7.70) than male participants ($M = 14.93$, Std. Dev.= 7.56).

A significant difference was obtained for attitudes towards the ad, $F(1, 153) = 4.67$ ($p < 0.05$), such that female participants had a more favorable attitude ($M = 4.76$, Std. Dev.= 1.45) than male participants ($M = 4.24$, Std. Dev.= 1.41) towards the ad.

A significant difference between groups was obtained for attitude towards the brand, $F(1, 154) = 6.30$ ($p < 0.05$), such that female participants had a more positive attitude towards the brand ($M = 4.73$, Std. Dev.= 1.04) than male participants ($M = 4.27$, Std. Dev.= 1.21).

Significant differences between groups was obtained for attitude towards the media, $F(1, 155) = 4.86$ ($p < 0.05$), such that female participants had a more favorable attitude towards the media ($M = 4.08$, Std. Dev.= 0.83) than male participants ($M = 3.77$, Std. Dev.= 0.90).

2. Language

38.5 % of the participants had English as their native language, 8.3 % French, and 53.2 % chose 'other' as their choice. Significant differences between these three groups was obtained for their attitude towards DTC advertising $F(2, 153) = 3.20$ ($p < 0.05$), such that participants with a native language other than English or French had the most positive attitude ($M = 3.99$, Std. Dev.= 1.36) towards DTC advertising, and participants with French as their native language had the most negative attitude ($M = 3.27$, Std. Dev.=0.94) towards DTC advertising.

3. Participants suffering from seasonal allergies

29.5 % of participants have at one point suffered from seasonal allergies, whereas the remaining 70.5 % of participants have never suffered from seasonal allergies. A significant difference between these two groups was obtained for their level of involvement, $F(1, 155) = 8.36$ ($p < 0.01$), such that participants who had suffered from seasonal allergies were more involved with the ad ($M = 19.24$, Std. Dev.= 8.41) than participants who never have suffered ($M = 15.41$, Std. Dev.= 7.16).

A significant difference between these two groups was obtained for the total amount of benefit information they recalled, $F(1, 155) = 7.72$ ($p < 0.01$), such that participants who have suffered from seasonal allergies recalled more benefit information ($M = 4.48$, Std. Dev.= 1.13) than participant who never have suffered ($M = 3.84$, Std. Dev.= 1.38).

4. Family member suffering from seasonal allergies

Of the 156 participants 34.6 % have a family member that suffers from seasonal allergies. A significant difference between these participants and the remaining 65.4 % who do not have a

family member suffering from seasonal allergies, existed for level of involvement, $F(1, 155) = 5.38$ ($p < 0.05$), such that participants with a suffering family member were more involved with the ad ($M = 18.48$, Std. Dev.=7.86) than participants with no suffering family member ($M = 15.51$, Std. Dev.= 7.48).

Furthermore, a significant difference between the groups was also obtained for their attitude towards the media, $F(1, 155) = 6.42$ ($p < 0.05$). Participants with a suffering family member had a more negative attitude towards the media ($M = 3.73$, Std. Dev.= 0.98), than participants with no suffering family member ($M = 4.09$, Std. Dev.= 0.78).

5. Have participants ever taken prescribed medication for his/her seasonal allergies?

9 % of participants have at one point taken prescribed medication for their seasonal allergies. A significant difference between these participants and those who have never taken prescribed medication for seasonal allergies were obtained for level of involvement, $F(1, 155) = 9.43$ ($p < 0.01$). Participants who have taken prescribed medication were more involved with the ad ($M = 22.43$, Std. Dev.= 8.05) than participants who have not ($M= 15.96$, Std. Dev.= 7.46).

6. Participants taking medication for seasonal allergies

Only 2.5 % of participants were taking prescribed medication for seasonal allergies at the time of the experiment. This may be due to the timing of the experiment. Testing was conducted during the summer, when seasonal allergies tend to be more dormant.