

STIGMA REDUCING COMPONENTS OF DIRECT-TO-CONSUMER
ADVERTISING: THEORY-DRIVEN CONTENT ANALYSIS OF PRINT DIRECT-
TO-CONSUMER ADVERTISING

by

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Abstract

Since the Food and Drug Administration (FDA) relaxed regulations on broadcast DTC advertising in 1997, DTC advertising has become a prominent part of public health communication. The purpose of this study is to assess the stigma reducing components of DTC ads based on the attribution theory and recategorization theory. Taken together, the combination of these two health communication theories can provide a useful framework to assess whether DTC advertising has made a sufficient effort to reduce the barrier in an attempt to motivate people to take appropriate actions for their treatment. A content-analysis of the past ten years from 1998 to 2008 of DTC ads of stigmatized diseases was done to critically evaluate the practice of DTC ads. Results focus on the prevalence of onset controllability (e.g., whether contracting an illness is blamable or not), offset responsibility (e.g., whether people have efforts to cope with or not) and recategorization (e.g., in-group) as textual cues and visual cues in the ads. Only half of ads (57%) offered a stigma reducing strategy. The most prevalent for both textual cues and visual cues were recategorization. However, an unbalance of stigma reducing components implies a meaning that Corrigan and Penn (1999)'s strategy of interventions to reduce stigma could not effectively function. Therefore, it required appropriate adjustments by onset controllability, offset responsibility and recategorization.

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Introduction

Since the Food and Drug Administration (FDA) relaxed regulations on broadcast DTC advertising in 1997, DTC advertising has become a prominent part of public health communication. Proponents claim that the contents of DTC advertising play an important role in providing health information to the public (Holmer, 1999; Holmer, 2002; Kelly, 2004), while opponents argue that heavy DTC advertising has raised drug costs as well as unnecessary prescribing (Elliott, 2003; Findlay, 2001). Amid the heated debate, it is critical to assess the contents of DTC advertising to see how and to what extent they are constructed in a way that could benefit the public. A thorough theory-based evaluation of DTC advertisements can enable us to judge intended communication outcomes, especially their impacts on health-related beliefs.

Given the important role of health theories to craft effective messages, scholars have extended the application of theories to the evaluation process in many disciplines (see Cappella et al., 2001; Stephenson & Quick, 2005; Stephenson, 2002). However, most of studies of DTC advertising (see Huh & Cude, 2004; Kaphingst & DeJong, 2004; Kaphingst, DeJong, Rudd, & Daltroy, 2004; Kopp & Bang, 2000) evaluated the contents based on the Food and Drug Administration (FDA) guidelines to see whether DTC ads meet the current fair-balanced components. Essential as it is to evaluate the contents for their adherence to the existing standards, it is also important to assess the communication values of DTC ads from health theory perspectives. A systematic analysis of message components will help generate better directions for the FDA to promote the utilization of DTC advertising to its full effect. Considering the ongoing debate about the pros and cons of DTC ads in the United States, it is time to thoroughly examine whether the DTC

ads consist of the necessary theoretical components to enhance the public's health outcomes.

DTC advertising related to stigmatized disease would particularly benefit from theory-based evaluation of its communication value. Because stigmatized diseases are often under-treated, public efforts to reduce the stigma attached to these medical conditions are critically needed. The value of DTC ads can lie in raising awareness and reducing stigma as the visibility of DTC ads increases. In fact, among the top 20 most advertised prescription drugs, five medical conditions are often linked to high stigma: depression (Wellbutrin), sexually transmitted infection (Valtrex), fungal skin infections (Lamisil), and two kinds of erectile dysfunction (Cialis, Viagra). However, little is known as to whether such DTC ads contain the components to reduce stigma or not, in addition to promoting the brand name itself. Whether DTC ads contain theoretical components to reduce stigma has a direct bearing on the debate about the social benefits of DTC ads.

The purpose of this study is to assess the stigma reducing components of DTC ads based on the attribution theory and recategorization theory. Taken together, the combination of these two health communication theories can provide a useful framework to assess whether DTC advertising has made a sufficient effort to reduce the barrier in an attempt to motivate people to take appropriate actions for their treatment. A content-analysis of the past ten years of DTC ads of a stigmatized disease will allow us to critically evaluate the practice of DTC ads since the FDA loosened the broadcast requirements in 1997.

An overview of DTC advertising

Carrying a great deal of weight in the field of advertising, Direct-to-consumer (DTC) advertising is one of the most rapidly growing categories of advertising since 1990 (Davis, 2000). Throughout the beginning of the 21st century in the U.S. market, DTC advertising has increased to 2.5% of the total advertising expenditures and has become the fourth largest consumer advertising category (NIHCM, 2001; Blankenhorn *et al.*, 2001). Bradley and Zito (1997) define the trends of DTC advertising into three categories; first, health-seeking DTC advertisements play a role in educating consumers about a disease or medical condition. Second, reminder DTC advertisements mention the name of the drug and a little information, but do not mention anything about the drug's use, effectiveness, or safety. Finally, product-specific DTC advertisements explain a drug therapy by name, describe its remedial uses, and represent its safety and effectiveness. Most advertisements show the latter category trend.

These DTC advertisings have provoked ongoing controversy in the U.S. Proponents argue that DTC advertising has fair and balanced information and therefore it is a good educator to consumers to increase awareness of stigmatized and under-diagnosed diseases (Calfee, 2002; Holmer, 2002). They also argue that DTC advertising increases consumers' attention about health conditions and treatments and encourage them to seek more information (Allison-Ottee *et al.*, 2003; Perri & Dickson, 1988). In contrast, opponents argue that DTC advertising does not have fair and balanced information about health benefits and risks of a drug (Bell *et.al.*, 2000) and persons who lack that specialized knowledge are enticed to inquire about the marketed same drugs (Bradley& Zito, 1997; Hollon, 1999).

Focusing on the relationship between the content of DTC advertising and its impact on consumer behavior, many researchers have studied DTC advertising. However, much scholarly attention has been paid to the results of the effects of DTC advertising focusing on the exposure to DTC advertising. These studies explain consumers' attitudes toward DTC advertising such as intention to visit the doctor, and requests for specific drugs or analyzed physicians' attitude toward DTC advertising. However, there are few studies which provide in-depth content analysis of text as a means of evaluating message content.

Previous studies of DTC advertising with content analysis

A number of studies of DTC advertising have been conducted, however, despite a large amount of research, the current DTC studies have limited scope. Many studies focused on the relationships between the content of DTC advertising and consumers' behavior, yet there are not many studies about DTC advertising examining message components. Even though many studies treated content in DTC advertising as a very important issue, there has been little effort to analyze the content of existing advertisements. A few studies which focused on analyzing the content of DTC advertising and these studies can be divided into three categories. First, many content analyses of DTC advertising have been related to fair- balance, which evaluates whether fair and balanced information about the health benefits and risks of a drugs provided from DTC advertising meets FDA's "fair balance disclosure" provision, looking at whether DTC advertising contains well-balanced information about not only benefits but also risks (Abel, Lee, & Weeks, 2007; Huh & Cude, 2004; Kaphingst & Dejong, 2004;

Kaphingst, Dejong, Rudd, & Daltroy, 2004; Kopp & Bang, 2000). Second, there are some studies which examined the educational role of DTC advertising (Bell, Wilkes, & Kravitz, 2000; Frosch, Krueger, Hornik, Cronholm, & Barg, 2007; Kaphingst & Dejong, 2004; Kaphingst *et al.*, 2004). Finally, the last category of content analysis of DTC advertising examines types of appeals to consumer of not only television DTC advertising (Frosch, Krueger, Hornik, Cronholm, & Barg, 2007), but also web sites DTC advertising (Macias & Lewis, 2003).

First, one of the most important regulations of FDA is fair balance because a complete understanding of the advertised drug's benefits and risks can lead consumers to make the right decisions (Davis, 2000). The studies about fair-balance were conducted based on the FDA's "fair-balance disclosure" provision and this provision played a role in providing a basic guideline for evaluating benefit information and risk information in each advertising. By focusing on whether advertisings contained well-balanced information and how this information was presented, these studies helped consumers to understand the advertised drug's potential risks and benefits. Fair balance studies were conducted through website, print advertising, and television advertising. Huh and Cude (2004) focused on three aspects to examine the fair-balance of DTC prescription drug websites. Results showed that first, the type of information on DTC prescription drug websites was specific about risk statements in each website. Second, the imbalance between the amount of information about risks and benefits are revealed. In terms of accessibility, benefit information was more accessible than risk information. The last result about the completeness of risk statements showed that "more than three-quarters of websites did not provide numeric descriptors for the incidence level of each side effect

other than the information that appeared in package inserts” (p.537). Through this study, it is concluded that most websites draw more consumers’ attention to benefit information than to risk information.

Abel et al. (2007) examined all oncology print DTC advertising appearing in three patient-focused cancer magazines and other selected popular magazines in order to evaluate the fair-balance. They not only designed the text as benefit or risk/adverse effects, but also assessed the text placement as first third and/or final third. The results showed that benefit information was presented in the first third of text, while risk/adverse effect information was presented in the final third. Comparing the font size, benefit information was shown in larger font size than risk/adverse effect information.

Kaphingst et al. (2004) conducted analysis focusing on “product-specific advertisements appearing on the three major television network (ABC, CBS, NBC)” (p. 517). They counted advertisements as product-specific DTC advertisement based on three standards; whether they advertised a prescription drug or not, whether they stated the name of the drug, and whether they gave at least one indication for the drug. In this study, the coding dimensions are grouped into three categories; the presentation of risk and benefit information in the ads, adequate provision for dissemination of detailed product information, and describing the educational content of the advertisements. The presentation of risk and benefit information were examined using a number of different aspects such as risk information in one continuous segment, speed change, tone change, volume change and announcements by a different announcer. This study found that most of advertisements did not achieve fair-balance because statements about benefits outnumbered statements about risks. 83% of ads presented the risk information in one

continuous section. Moreover, only a few ads use speed change, tone change, volume change and different announcer for the risk information. In another study conducted by Kaphingst & Dejong (2004), they also examined television advertisements. They focused on the amount of time a viewer has to absorb facts about risk and benefits and the lack of important contextual information in risk statements. They also found that most of the advertisements presented risk information in one continuous segment and an advertisement with contradictory visual and audio messages minimizes risk information compared with benefit information.

Moreover, a more recent study reviewed previous empirical studies that focused on the importance of fair-balance (Kopp & Bang, 2000). This study examined the content of benefit and risk information in DTC advertising and the content's impact on physicians and consumers. The study conducted content analysis of prescription drugs advertising directed toward physicians and directed toward consumers. The results showed that DTC advertising passed over imbalanced information, emphasizing benefit information over risk information. "Promotional or benefit content appears to continue to outweigh side effect and cautionary content, and that often the advertising does not comply with FDA rules" (Kopp & Bang, 2000, p.48).

Second, in DTC advertising, studies with content analysis which are designed to explore the nature of the presented information focus on the educational role of DTC advertising. The following studies are content analysis about fair-balance used to evaluate the educational role of DTC advertising. These studies assessed the effort of DTC advertising which have been conducted and concluded that print advertising (Bell *et al.*, 2000) as well as television advertising (Frosch *et al.*, 2007; Kaphingst & Dejong, 2004 ;

Kaphingst *et al.*, 2004) played an insufficient role in educating patients about risk factors. These studies showed that most of advertisings did not provide sufficient information about risk factors or symptoms. This causes failure of awareness among undiagnosed individuals. Frosch *et al.* (2007) used the types of factual claims about the target condition such as any factual information (e.g., symptoms), biological nature or mechanism of disease, risk factor or cause of condition, prevalence of condition, and subpopulation at risk for the condition. Results showed that advertisements only provide limited information about the causes of a disease and who is at risk.

Bell, Wilkes, & Kravitz (2000) examined the educational value of DTC print advertisements by analyzing the content of DTC print advertising and conclude that DTC advertising has only a minimal amount of information to educate consumers. Bell *et al.* (2000) created a medical condition information index and a treatment information index by summing the number of medical condition codes and the number of treatment codes present within each advertisement. The purpose of this study was to determine whether each advertisement contained 5 elements of medical information conditions and 6 elements of treatment information. The five elements of medical information condition are: condition name, misconceptions, precursors, prevalence, and symptoms. The six elements of treatment contain the competing treatments, mechanism of action, success rate, supportive behaviors, time to onset of action, and treatment duration. The results showed that among medical information conditions, the advertisements provided the medical condition name most often. The remaining elements ranked most to best often were, symptoms (sixty percent of the advertisements provided at least one symptom of the condition), information about precursor, information about condition prevalence, and

clarifications about a condition-related misconception. Among treatment information conditions, information about a drug's mechanism of action was the most presented. The next most dominant information was an acknowledgment of the existence of one or more competing treatments. Ranking third was information about supportive behaviors such as changes in diet, physical activity, and sleeping patterns. Fourth was information about time to onset of action. Fifth was about required treatment duration. The least information given was about success rate estimates. Comparing condition information and treatment information, this result revealed that, overall, condition information outweighs treatment information. The result of this analysis conclude that "these advertisements seldom educate patients about the mechanism of action by which the drug treats a particular condition, its success in doing so, alternative treatments, and behavioral changes that could argument or supplant treatment" (Bell *et al.*, 2000, p.1096).

In order to examine the educational content, Kaphingst *et al.* (2004) examined the use of medical versus lay terminology to express medical ideas in the advertising and they also examine whether they use only medical terms, lay terms or both. They also examined whether advertising includes contents about drug's effectiveness and indication information, information-seeking behaviors encouraged by advertisings and other key information. The result showed that 70% of advertisements used a combination of lay and medical terminology, but a majority of the advertisements did not provide information such as effectiveness and indication of drug. All of the advertisements contained content to encourage information-seeking behaviors. The results showed that the majority of the advertisement used medical terms. This means that those consumers with limited understanding of the medical terminology would have more difficulty in understanding

the advertisements. Macias & Lewis (2003) examined the content of the DTC prescription drug web sites, because understanding the use of advertising appeals can indicate whether the purpose of these advertisements is selling or educating. This study found that most websites provided much information and beneficial education of value to consumers. These websites played a pivotal role in guiding high-quality health information to consumers.

Finally, the last category of content analysis of DTC advertising examines types of appeals to consumers. Some studies of DTC advertising with content analysis focused on using the appeal method when examining fair-balance or educational aspects of DTC advertising. Many of the studies evaluated the content of each advertisement's appeal using the method of Bell *et al.* (2000). The studies which used Bell's method are following; Abel, Lee, & Weeks (2007), Macias & Lewis (2004). This taxonomy included the claimed attributes about the drug's effectiveness, social-psychological enhancements, ease of use, and safety. Bell *et al.* (2000) examined four sets of concerns; trends, intended target of these advertisements, inducements, and advertising appeals. This paper examined trends by examining the changes in the introduction of new brands of prescription drugs and classifying each of the advertisements under the calendar year in which it first appeared. During the 1989-1998, new advertisement and brand introductions dramatically increased and dermatological conditions were the most common brands advertised. The target audience was examined to better understand the promotional strategies of the drug industry. All of the advertisements were aimed at the potential user of the drug, but women were more often targeted. Inducements were examined and categorized into three types; patient support, information and financial

inducements. Based on the medical condition, the percentage of advertisements which included patient support offers, information offers, and financial incentives showed different trends. Advertising appeals were examined by using the table of taxonomy of advertising appeals. The most common appeals which were used in advertisements were effectiveness, symptom control, innovativeness, and convenience. Abel *et al.* (2007) examined the nature of appeals in each advertisement, considering if the advertisements used graphs, charts, or numbers/percentages of patients experiencing an outcome or adverse effects. The study also examined the effectiveness of the use of celebrities, actual patients or physicians and the use of patient testimonials, as well as the content of advertisements' appeals based on method of Bell *et al.*(2000) ; effectiveness, socio-psychological appeals, and ease of use. The result showed that a majority of the advertisements included clinical trial data and an image of a patient. The most widely used appeals were medication effectiveness. Socio-psychological appeals and ease of use medication were contained in about half of advertisements.

Macias and Lewis (2004) also examined the DTC prescription drug websites using the method of Bell *et al.* (2000) to understand the use of advertising appeals. They used the condition medical information codes and treatment information codes which were created by Bell *et al.* (2000). The result was similar to the result in print advertisements studies conducted by Bell *et al.*(2000), but appeals used in websites showed more monetary incentives and much more medical and drug information. Frosch *et al.* (2007) conducted the content analysis of television DTC advertising focusing on how they attempt to appeal to consumers, in order to examine the educational purposes of television DTC advertisings. The types of appeals to viewers such as rational, positive

emotional, negative emotional, humor, fantasy, sex, and nostalgia were examined. Moreover, using what Frosch *et al.* (2007) termed “lives of characteristics”, they examined how the advertisements portray the role of medication and healthy lifestyle behavior. While negative emotional appeals were used in sixty-nine percent of advertisements, positive emotional appeals still outweighed the total negative, when the combination of using both negative and positive appeals in the same message are factored in.

These previous studies of DTC advertising with content analysis show that these studies are categorized broadly with three categories such as fair and balance, educational information of DTC advertising, and appeal method based on FDA guidelines. These studies focused on the text with benefits and risks content, educational information, and the appeal of advertising with various categories or standards of content of advertising. Therefore, the fact that the nature of DTC advertising had been ignored in studies prior to those done by Bell *et al.* (2000). Bell *et al.* (2000) provided initial understanding of the influential characteristics of DTC advertising that have motivational effects leading to consumers to communicate with physicians about medications. However, this study had the limitation of not being based on theoretical framework. Given the various standards of content analysis, previous content analysis is not sufficient to evaluate the content of DTC advertising. However, there has been little analytical research assessing the DTC advertising contents based on the health communication theory. Even fewer have focused on a single drug category- stigmatized drug (e.g., antidepressant, sexually transmitted infection, fungal skin infections and erectile dysfunction). Therefore, more effort is needed to analyze the content of DTC advertising,

grounded in the health communication in order to facilitate the use of DTC advertising in educating consumers.

Background

Understanding the stigma with illness

Goffman (1963) described stigma as undesirable or discrediting characteristics which are linked to a flaw of immorality. According to Goffman's construction of stigma, society was dichotomized into 'normal' people and people who have discrediting attribute(s), that is, a stigma. Stigma can be divided into social stigma related to overt discrimination and self-stigma toward themselves (Corrigan & Watson, 2002). Stigma related to overt discrimination is the way the public views individuals with illnesses as being unpredictable and dangerous. Self-stigma, also called internal stigma or perceived stigma, is a form of reaction which stigmatized individuals have toward themselves (King *et al.*, 2007).

These two kinds of stigma function as a barrier for continuing health treatment and seeking information such as in case of mental illness (Sirey, Bruce, & Raue *et al.*, 2001) and sexually transmitted infection diseases (Barth *et al.*, 2002). Some consumers who have depression (Sirey *et al.*, 2001) or a sexually transmitted infection (Barth *et al.*, 2002) are silenced by social stigma, and hesitate to discuss their diseases or to seek information. Moreover, Sirey *et al.* (2001) revealed that people who have lower perceived stigma showed better adherence to the recommended medication regimen. Therefore, a better understanding of the mechanism underlying stigma reduction and

contriving appropriate strategies may enable us to identify important targets for clinical intervention to improve adherence and ultimately reduce under-treatments.

The lack of theory-driven stigma reducing strategy

Corrigan and Penn (1999) designed the strategy of interventions to reduce stigma which focused on three areas: education, contact, and protest. Efforts to provide familiarity with the stigmatizing condition through education (increasing knowledge about illness), contact (with people who have the stigmatized condition), and protest (telling those who take negative attitude toward the condition to stop) can reduce stigma. Especially, contact is described as both direct (e.g., face-to-face) and indirect (e.g., the media) interactions between public and persons affected in order to reduce stigmatizing attitude.

As shown in the previous studies, there have been content analyses of DTC advertising as just an educational role (Bell *et al.*, 2000; Frosch *et al.*, 2007; Kaphingst & Dejong, 2004; Kaphingst *et al.*, 2004), but the educational contents of these studies did not include mechanism of stigma reduction. Ball, Liang, and Lee (2008) explored DTC television advertisements based on the Corrigan and Penn's (1999) approaches to reduce the stigma-education and contact. However, given the lack of identifying specific change mechanisms of reducing stigma based on the theories, by stepping further into the education and contact strategy of Corrigan and Penn, this study evaluates specific strategic components based on the attribution theory and the recategorization theory. These two theories will be able to present the mechanism of how education and contact strategy can reduce stigma.

The attribution theory

The attribution theory is based on the assumption that individuals tend to look for causal understanding of all events (Weiner, 1980). This theory has been broadened to the study of social stigma and reactions to social stigma (Weiner *et al.*, 1988). People have a tendency to search for causes of disease in a person and decide on their behavioral reaction to a person with a stigmatized condition (Rush, 1998). Therefore, this theory can explain that how an individual's attribution about others with illness affects the formation of stigma. Even though various internal and external dimensions make attribution, the controllability dimension especially is linked to perception of a person with stigmatized illness.

Controllability which is related with the concept of responsibility is one of the dimensions of perceived causality in attribution theory (Weiner, 1986). Controllability is defined as perceptions of the stigmatized individual when they are responsible for the condition or when the condition could be removed by the behavior of the stigmatized individual (Crocker *et al.*, 1998). Controllability can be further distinguished into two components: responsible perception for the inception and the perpetuation of their stigmas. These two components are referred to as onset controllability (e.g., whether contracting an illness is blamable or not) and offset controllability (responsibility) (e.g., whether people have efforts to cope with or not) (Corrigan, 2000; Schwarzer & Weiner, 1991). Even though onset controllability and offset controllability are not independent, this study proposes that onset controllability and offset controllability separately contribute to perceive stigmas of the individuals. According to some studies, onset-controllable stigmas are related to affective reactions of no pity, little liking, and anger

(Weiner *et al.*, 1988). On the other hand, uncontrollability attributions about an event can evoke pity and helping behavior (Schmidt & Weiner, 1988; Zucker & Weiner, 1993).

Bergman and Chalkey (2007) examined the relationship between stickiness (retention) of stigma and controllability about dirty work. Stickiness can only occur when a stigma has been removed (Bergman & Chalkey, 2007). In high offset controllability situations, if the individual worked in a dirty job for a long time, this would be treated that the individual wants to do the work. Having high offset controllability increases likelihood of stigma. However, when offset controllability is low, despite of the high tenure of their attribution, the retention of stigma is relatively low.

Mental illness is treated as more controllable than physical illness by people (Weiner *et al.*, 1988). This attribution makes people with stigmatized illness take responsibility and mental illness is more stigmatizing (Corrigan, 2000). In the case of erectile dysfunction, until 1970s, there was a perception that the cause of erectile dysfunction was psychological in origin (Melman, & Gingell, 1999). This erectile dysfunction condition reduced individuals' self esteem and affected their relationships according to the Impotence Association survey (1997). However, many researches focused on the mechanism and provided the knowledge of the physiology of erectile dysfunction (see Moreland, Hsien, Nakane, & Brioni., 2001).

Weiner *et al.* (1988) examined the effects of manipulated perception of causal controllability. The results showed that a shift of attribution produced more positive affective and help-related reactions. As such, if people believe that the causes of mental illness are out of the control of individuals, their reactions to the mental illness will be less negative. Therefore, a shift in attribution from controllable to uncontrollable can help

to reduce stigma. Uncontrollability attributions are the key component of education which leads people to evoke more public sympathy and to reduce stigma. Educating people about biological concepts and biomedical explanations about mental illnesses such as neurotransmitter depletion can change attribution from controllable to uncontrollable at onset. For example, some studies of obesity based on attribution theory showed that educating people about the biological, generic, and uncontrollable reasons for obesity could change attitudes toward obese people (Crandall, 1994; Wiese, Wilson, Jones & Neises, 1992). Crandall (1994) studied attitudes of adult participants toward obese people by targeting the controllability of obesity, rather than general knowledge about obesity. A persuasive message which explained the reason of obesity by uncontrollable physiological/metabolic and generic factors was able to change people's beliefs about the controllability and reduce adults' negative attitude toward obese people. A similar study of Anesbury and Tiggemann (2000) was conducted by targeting children. The result showed that education of metabolic factors could reduce children's beliefs about the controllability of obesity toward obese people. Therefore, biogenetic explanation will help to reduce stigma by the public as well as self-stigma.

However, the studies are insufficient to determine if stigma onset is the sole determinant of affective and behavioral reactions toward the stigmatized (Schwarzer & Weiner, 1991). In terms of offset controllability, Schwarzer and Weiner (1991) suggested coping effort as an important determinant of affective and behavioral reactions of others. This study conducted an experiment to explore the effects of onset controllability and coping efforts on blame and emotions such as pity, anger and social stress. This study compared the effects of perceived onset causality with perceived coping efforts on

affective reaction and behavioral judgments towards the stigmatized. Coping effort is manipulated with sticking to a healthy diet and adhering to medication prescribed by doctors. Results showed that a person with onset uncontrollable and high coping effort evoked high pity. People who did not cope were blamed more than those who were coping.

When these two attributions are correlated to DTC advertising, onset controllability can be applied as informing cause of illness/uncontrollable. However, because coping effort is a person's real effort, ads cannot directly cover this offset responsibility attribution. Therefore, Offset responsibility is defined as person's own will to cope with or overcome the stigmatized medical condition or efforts to cope with the condition except for taking medicine.

The recategorization theory

The recategorization theory explains how contact can reduce stigma. Meeting persons with stigma is able to diminish stigma (Holmes *et al.*, 1999; Link & Cullen, 1986). According to Link and Phelan (2001), people label human differences and separate 'us' from 'them'. This labeling causes the stigma. The mere categorization of people into in-groups and out-groups cause differentiation between the in-group and out-group and leads to seeing the in-group as favorable (Devine, 1995). This group boundary leads to perceptual biases and discrimination (Devine, Plant & Harrison, 1999). Contact with out-group members enables people to change behaviors toward out-groups from 'them' to 'us' by blurring the intergroup boundaries through decategorization (Brewer & Miller, 1984). Under decategorization, people are recognized as more differentiated

individuals, personal interaction is performed, and attraction is decided by personal characteristics and actual interpersonal similarities. The Common Ingroup Identity Model can further explain the additional process that influences the perception of group boundaries through recategorization. According to recategorization, people who are involved in separate groups recognize themselves as a member of common superordinate category including former in-group and out-group members (Gaertner & Dovidio, 2000; Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993). That is, this model can explain that the process of recategorization establishes more harmonious intergroup relation.

Many empirical studies revealed that categorization of a person as in-group members rather than out-group members produced more positive evaluations (Brewer, 1979) and perceptions of shared beliefs (Brown, 1984). It also enhanced memory for positive information about others (Howard & Rothbart, 1980) and reduced attributions of personal responsibility for negative outcomes (Hewstone, Bond, & Wan, 1983). Nier, Gaertner, Dovidio *et al.* (2001) conducted studies which examined whether developing a common in-group identity among Blacks and Whites can improve Whites' interracial evaluations. The result showed that when Whites interacted with Blacks as members of the same group rather than as separate individuals, they were more favorable to Blacks. Intergroup contact which is designed to produce a recategorization of people from out-group to in-group can reduce bias (Sherif *et al.*, 1961).

Then, how can vicarious contact through advertisements reduce stigma without personal or direct contact? Vicarious contact is defined as a person's subjective feeling that he or she has personal relationship similar to direct contact through mass media (Herek & Capitanio, 1997). Corrigan, Larson, Sells, Niessen, & Watson (2007) examined

the impact of not only indirect education, but also indirect contact, in order to examine whether these two programs reduce stigma or not. Results showed that even though indirect education had limited effects, indirect contact impact was significant. Devine and Hirt (1989) said that campaigns such as indirect contact are able to develop behavior change. For example, many studies which examined the effects of vicarious contact were extensively conducted, since Earvin “Magic” Johnson revealed his HIV infection in 1991. His announcement promoted public awareness about AIDS and to motivate AIDS education (Stevenson, 1991). This celebrity self-disclosure by vicarious contact showed an effect similar to direct contact (Kalichman, Russell, Hunter & Sarwer, 1993). A reduction in AIDS stigma is able to be expected as more celebrities disclose their HIV status or AIDS diagnosis. Vicarious contact has its greatest impact on those individuals who have the highest levels of stigma (Herek & Capitanio, 1997). Moreover, Herek & Capitanio (1997) assessed that whether direct contact and vicarious contact with a person with AIDS (PWAs) do indeed have similar effects on public attitudes toward AIDS and levels of stigma directed at PWAs. Both contacts affect to reduce stigma, but the results showed that all of the different stigma variables indicated that vicarious contact was associated with higher, albeit diminishing, stigma, while direct contact was associated with low or decreasing levels of stigma. As shown the example of “Magic” Johnson, it is proven that not only vicarious contact through mass media, but also developing person with stigma as common in-group member is effective to reduce stigma.

Therefore, efforts which change people with stigmatized diseases from ‘them’ to ‘us’ or from ‘out-group’ to ‘in-group’ can be a strategy to reduce stigma. Corrigan *et al.*

(2002) suggests that “combining education with contact with a person with mental illness can enhance the effects of an intervention” (Corrigan & Watson, 2004 p.478).

Visual cues and textual cues in DTC advertising

Effective messages to influence people can be created based on theories. This paper considers both the textual and the visual cues of the persuasive health message in stigma DTC advertising, based on variables of the attribution theory and the recategorization theory. Even though nonverbal cues have outweighed verbal cues in interpreting interaction (Birdwhistell, 1955) and have potential power, there has been little study of visual cues in DTC advertising (see Cline& Young, 2004; Grow, Park & Han, 2006). Visual cues play a role in thinking peripherally through photographs, depicted people, and their characteristics, while text focuses on issue-relevant thinking such as medical condition, symptoms, diagnosis, appropriate treatment and management, and risk of treatment (Cline & Young, 2004). In other words, visual cues and textual cues play a reciprocal role.

Research Questions

RQ1: What components of reducing stigma are most prevalent in DTC print ads via textual cues?

RQ 2: Are there significant differences of textual components of reducing stigma among medical conditions of DTC advertising?

RQ3: What components of reducing stigma are most prevalent in DTC print ads via visual cues?

RQ4: Are there significant differences of visual components of reducing stigma among medical conditions of DTC advertising?

Method

A content analysis was conducted to evaluate the content of DTC advertising that may function to reduce stigma.

Sample Materials

In the current study, a print advertisement is defined as either a “single page” advertisement or a “spread” (two pages facing one another). This paper only analyzes a print advertisement except for the additional page listing the brief summary as required by the FDA.

Advertisements were collected from a popular magazine from January of 1998 to December of 2008 through microfilm. *Time* magazine has been selected because of its high circulation. It is one of top magazines according to Advertising Age (2006). In addition, among top circulation magazines, *Time* services the general population (men

50% and women 50%) without being skewed toward men or women (Anon, 1998).

Among general readership magazines, *Time* has the highest circulation (Anon, 1998).

Because of these reasons, this magazine was selected as a representative of consumer magazines.

The sample included products which are related to medical conditions with high levels of stigma among the top 20 pharmaceutical products in terms of spending on Direct-to-Consumer advertising in 2005 (Donohue, Cevasco, & Rosenthal, 2007). They included sexually transmitted diseases (e.g., genital herpes and Human Papillomavirus infection) (Valtrex), depression (Wellbutrin), fungal skin infection (Lamisil) and erectile dysfunction (Cialis, Viagra). Moreover, according to the pharma report 2008 (Medical Marketing & Media), bipolar disorder (Seroquel) and anxiety disorder (Effexor XR) are included in the top 20 pharmaceutical drugs by US sales in 2007. In terms of top 20 therapeutical categories by US sales in 2007, antipsychotics are ranked to third and anti-depression is ranked to fifth. Based on these reports, this study categorized stigmatized diseases as mental illness (Anti-depression, bipolar disorder, Alzheimer's disease, Attention-deficit hyperactivity disorder (ADHD), anxiety disorder) (Sirey, Bruce, & Raue, *et al.*, 2001), vaginal disease (Centers for Disease Control and Prevention, 2004), fungal skin infection (Tarango, 2007) and erectile dysfunction (ED) (the Impotence Association survey, 1997). A sample was drawn from these 4 categories of stigmatized diseases print advertisements, and was defined as 8 types of medical conditions by subdividing mental illness into 5 types.

There were a total of 228 DTC advertisements related to stigmatized medical conditions in the study: anti-depression (32), bipolar disorder (31), Alzheimer's disease

(26), ADHD (14), anxiety disorder (2), vaginal disease (4), fungal skin infection (28), erectile dysfunction (91). Each advertisement was counted only once when advertisements are repeated across magazines. Repeated ads were eliminated. Moreover, the criteria for classifying ads followed visual images. This study excluded pharmaceutical companies' advertisements which do not mention a specific drug. Therefore, the selected 79 samples showed totally different visual images.

The sample process yielded 85 kinds of DTC advertisements for 19 drugs addressing 8 types of medical conditions. However, because of illegibility of microfilm of 6 kinds of DTC advertisements (5 kinds of Viagra, 1 kind of Effexor XR), these ads were eliminated. Therefore, this study examined contents of 79 advertisements.

Definition of stigma reducing variable

1. Education

Education is operationally defined as information about onset controllability and offset responsibility. Onset controllability is defined as biological concept and biomedical explanation. This is an effort that explains uncontrollable attribution at onset. Offset responsibility is defined as person's own will to cope with or efforts to overcome medical condition except for taking medicine.

2. Contact

Contact is operationally defined as the effort an individual with an illness makes to be part of an in-group, or inversely to remain detached from illness. If an advertisement has the 'us' concept or 'in-group' concept visually or verbally, this is coded as contact. For example, if the ads verbally mention "You are not alone", this is

defined as ‘us’ concept. In visual cues, if visual cues depict a social relation with other people, this is treated as ‘us’ and is defined as contact.

Measurement

To operationalize the dimension of reducing stigma message strategies, this study created a coding scheme and combined the Cline & Young’s (2004) visual cues in order to fit the items into the content analysis of stigmatized disease DTC ads as “former health communication message strategies.” This study grouped the coding dimensions into two categories: controllability (onset controllability and offset responsibility) and recategorization (from ‘them’ to ‘us’).

Coding systems

1. Controllability
 - 1) Onset controllability

Onset controllability is defined as biological concept and biomedical explanation. In textual cues, if the ad explains the cause of illness as biological or biomedical problem, this was coded as onset controllability. In visual cues, first, if a picture uses the depictions of biological organs or symptoms, this was coded as onset controllability. Second, if a graphic framing of disease as chemically bound is shown, this was coded as onset controllability. Third, if the cause of illness is explained by symbolically informational medicalized diagram, this was coded as onset controllability.

2) Offset responsibility

Offset responsibility is defined as person's own will to cope with or overcome the stigmatized medical condition or efforts except for taking medicine. Offset responsibility is divided into two concepts. The first is implied coping efforts and the second is direct coping efforts. In textual cues, first, if the ad explains the way of treatment on the assumption that a patient has tried to manage the stigmatized condition, this will be coded as implied coping efforts. For example, if ads asks "Are you looking for a way, because current treatment isn't effective?", this sentence has implied this patient has been coping with this condition. Second, if the ad expressed directly patient's coping effort, this will be coded as direct coping effort. For example, if ads says "I have tried to overcome this condition.", this ad is directly showing a patient's coping effort. In visual cues, if ads depict a person who is exercising or getting therapy, this will be treated as offset responsibility.

2. Recategorization

In textual cues, first, if the content contains the meaning of 'we, our, us' or 'You're not alone,' this was coded as recategorization. Using the 'we' is treated as emphasizing in-group membership. Second, if there is verbal expression containing inclusion like "join", this will be also coded as recategorization. In visual cues for ads, coders coded social or relational context based on Cline and Young's (2004) visual cues. Depicting social and relational context can express that boundaries between groups is blurred and an individual with stigma is an in-group member. Moreover, this also means "join" similar to textual cues. First, social context is defined as a picture where there are two or more people; family (depicting people from two generations), romance (depicting

only two people engaged in embracing or mutual gazing), work (reflected in work-related clothing and/or equipment), recreational (relaxing), or other (indeterminate). Second, relational context is defined based on the number of people depicted: alone, dyad, or in a group.

Coding processes

Coders were trained to implement the coding system by reviewing the coding manual and practicing sessions that established acceptable inter-coder reliability levels.

Coders independently coded the randomized sample of 79 advertisements. In addition, 20% of ads were randomly selected for the purpose of assessing reliability. Inter-coder reliabilities ranged from Cohen's kappas of 0.81 to 1.00 for nominal data.

Inter-coder reliabilities reported as Cohen's Kappas were as follows: Types of visual cues (1.00), visual onset controllability (1.00), visual offset responsibility (0.94), visual recategorization social context (1.00), visual recategorization relational context (1.00), types of textual cues (0.89), textual onset controllability (0.89), textual offset responsibility (0.90), textual recategorization (0.81).

Data analysis

This study used the advertisement as units of analysis. Data were analyzed in the forms of descriptive statistics and cross-tabulations. Chi-square analysis also was used.

Results

Data were analyzed in terms of presence of onset controllability, offset responsibility and recategorization. Results were separately reported for the visual cues and textual cues.

Descriptive statistics

This study included a sample size of 79 advertisements in Time magazine. Stigmatized disease ads were categorized into 8 types of disease conditions. 5 brands of Anti-depression drug were advertised: Prozac, Paxil, Cymbalta, Wellbutrin and Zoloft. Bipolar disorder drug included 2 brands: Abilify and Seroquel. Alzheimer's disease was only advertised by 1 brand: Aricept. ADHD included 3 brands: ADDRALL XR, Vyvanse and Straterra. Anxiety disorder included 2 brands: BuSpar and Effexor XR. However, because of illegibility of microfilm advertisements, Effexor XR was dropped. Vaginal disease included 3 brands: Diflucan, Gardasil, and PREMPRO. Fungal skin (nail) infection included 1 brand: Lamisil. Erectile Dysfunction (ED) included 3 brands: Viagra, Cialis, and Levitra (See Table 1).

Table 1-Descriptive statistics for category of drug

		Brand	Number of Ads
	Anti-depression	5	15
	Bipolar Disorder	2	6
Category	Alzheimer's Disease	1	10
Of Drug	ADHD	3	8
	Anxiety Disorder	1	1
	Vaginal Disease	3	4
	Fungal skin infection	1	4
	Erectile Dysfunction	3	31
Total		19	79

The first RQ asked, “What components of reducing stigma are most prevalent in DTC print ads via textual cues?” This study found that 17 ads offered onset controllability, 11 ads offered offset responsibility, and 26 ads offered recategorization. Among the total 79 ads, these occupied as onset controllability (21.5%), offset responsibility (13.9%), recategorization (32.9%) (See Table 2). Among 79 ads, 34 ads did not offer any kinds of textual cues at all (43%). Therefore, 57% of ads offered stigma

reducing components as textual cues. However, among these 34 ads, 18 ads offered visual cues (e.g., onset controllability, recategorization). Therefore, 16 ads did not offer any kinds of stigma reducing component neither textual cues nor visual cues (See Table 3).

Table 2- Prevalence of textual cues (total ads =79)

	Category of textual cues			
	Onset	offset	recategorization	Not at all
Ads N	17	11	26	34
Percentage	21.5%	13.9%	32.9 %	43%

Table 3- Descriptive statistics for ads without stigma reducing components

	Brand	Number of Ads
	Cymbalta	4
Did not contain	Strattera	1
any kinds of stigma cues,	BusPar	1
either textual cues or	PREMPO	1
visual	Lamisli	1
	Viagra	7
	Levitra	1
Total		16
Contain	Aricept	7
visual cues	ADDRALL XR	2
only	Vyvanse	2
	Viagra	7
Total		18

Comparison of textual cues among medical conditions

The second RQ asked: “Are there significant differences in textual components of reducing stigma among medical conditions?”

Onset controllability. Onset controllability was explained as cause of illness being either biological, biomedical or attribution change such as irrational thoughts or inappropriate thoughts. Onset controllability was offered by 17 ads in four medical conditions: anti-depression (10), Erectile Dysfunction (3), vaginal disease (2) and bipolar disorder (2) (See Table 4).

Among textual onset controllability components, biological or biomedical concept occupied 85% and change attribution occupied 15% (See Table 5). All of the ads which offered onset controllability offered uncontrollable biological or biomedical concept. Especially, 3 Prozac ads offered both biological concept and change attribution.

To compare the presence of onset controllability among medical conditions, a chi-square analysis was also conducted. The results (See Table 4) showed that the onset controllability was significantly different among (at the $p < 0.05$ level) medical conditions. Anti-depression ads with onset controllability (66.7%) were shown more often than vaginal disease ads (50%) and bipolar disorder ads (33.3%).

Each brand of the anti-depression ads (Prozac, Paxil, Cymbalta, and Zoloft) offered onset controllability except for Wellbutrin.

Table 4- Textual onset controllability by medical condition

	Medical condition								total
	Anti-depressio n n	Bipolar disorder	Alzheimer's disease	ADHD	Anxiety disorder	Vaginal disease	Fungal skin infection	Erectile dysfunction	
	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	
Yes	10 66.7%	2 33.3%	0 0	0 0	0 0	2 50%	0 0	3 9.7%	17 21.5%
No	5 33.3%	4 66.7%	10 100%	8 100%	1 100%	2 50%	4 100%	28 90.3%	62 78.5%
Total	15 100%	6 100%	10 100%	8 100%	1 100%	4 100%	4 100%	31 100%	79 100%

Chi-square = 29.402 ($df=7, p=.000$)**Table 5- Prevalence of textual onset controllability**

	Textual onset controllability		
	Biological concept	Change attribution	Total
N	17	3	20
Percentage	85%	15%	100%

Offset responsibility. Offset responsibility was explained as a will to cope with a medical condition. Among 79 ads, 11 ads offered offset responsibility: anti-depression (1), bipolar disorder (4), Alzheimer's disease (2), ADHD (1), fungal skin infection (2), erectile dysfunction (1). In terms of a portion of offset responsibility content in each medical condition, offset responsibility was occupied in each medical condition: anti-

depression (6.7%), bipolar disorder (66.7%), Alzheimer's disease (20%), ADHD (12.5%), fungal skin infection (50%), erectile dysfunction (3.2%) (See Table 6).

Among 11 offset responsibility components, 6 ads depicted implied coping efforts and 5 ads offered direct coping efforts. Implied coping efforts were found as follows: “Are you still using OTC brush-on remedies or messy surface creams to treat your infection nails? (Lamisil)”, “Unlike clippers or surface treatments you try on your own, (Lamisil)”, “Can your medicine do all that? (Wellbutrin)”, “ If your child’s current therapy isn’t making the difference you hoped for, talk to your doctor today about ADDRALL XR (ADDRALL XR)”, “You want to move forward with treatment to help stabilize your mood swings (Abilify).” Direct coping efforts were found as follows: “I love my life way too much to just hand it over to Alzheimer’s. When my memory started failing, I knew I had to see my doctor (Aricept)”, “You’ve spent years trying to manage the extreme ups and downs with mood swings and relapses (Abilify)” (See Table 7).

To compare the presence of offset responsibility between medical conditions, a chi-square analysis was also conducted. The results (See Table 6) showed that there was a significantly difference between (at the $p < 0.05$ level) medical conditions. Bipolar disorder (66.7%) and fungal skin infection (50.0%) offered offset responsibility more often than anti-depression (6.7%) and erectile dysfunction (3.2%).

Table 6- Textual offset responsibility by medical condition

	Medical condition								total
	Anti-depression	Bipolar disorder	Alzheimer's disease	ADHD	Anxiety disorder	Vaginal disease	Fungal skin infection	Erectile dysfunction	
	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	
Yes	1 6.7%	4 66.7%	2 20.0%	1 12.5%	0 0%	0 0%	2 50.0%	1 3.2%	11 13.9%
No	14 93.3%	2 33.3%	8 80.0%	7 87.5%	1 100%	4 100%	2 50.0%	30 96.8%	68 86.1%
Total	15 100%	6 100%	10 100%	8 100%	1 100%	4 100%	4 100%	31 100%	79 100%

Chi-square =23.019 ($df=7$, $p= 0.002$)**Table 7- Prevalence of textual offset responsibility**

	Textual offset responsibility		
	Implied coping effort	Direct coping effort	Total
N	6	5	11
Percentage	54.5%	45.5%	100%

Recategorization. Recategorization was suggested in all medical conditions except for 1 medical condition: anxiety disorder. Recategorization was offered by 26 ads: anti-depression (5), bipolar disorder (3), Alzheimer's disease (3), ADHD (4), vaginal disease (1), fungal skin infection (1) and Erectile Dysfunction (9). A portion of

recategorization content in each medical condition was occupied as followed: anti-depression (33.3%), bipolar disorder (50.0%), Alzheimer's disease (30.0%), ADHD (50.0%), vaginal disease (25.0%), fungal skin infection (25.0%) and Erectile Dysfunction (29.0%) (See table 8).

Among textual recategorization components, we or you're not alone concept was offered in 23 ads, and 8 ads offered "join" concept as recategorization textual cues (See Table 9).

To compare the presence of recategorization among medical conditions, a chi-square analysis was also conducted. The results (See Table 8) showed that there was no significantly different between (at the $p < 0.05$ level) medical conditions. Therefore, we could not find any difference in the presence of recategorization.

Table 8- Textual recategorization by medical condition

	Medical condition								total
	Anti-depression	Bipolar disorder	Alzheimer's disease	ADHD	Anxiety disorder	Vaginal disease	Fungal skin infection	Erectile dysfunction	
	N	N	N	N	N	N	N	N	
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
Yes	5	3	3	4	0	1	1	9	26
	33.3%	50.0%	30.0%	50.0%	0	25.0%	25.0%	29.0%	32.9%
No	10	3	7	4	1	3	3	22	53
	66.7%	50.0%	70.0%	50.0%	100%	75.0%	75.0%	71.0%	70.9%
Total	15	6	10	8	1	4	4	31	79
	100%	100%	100%	100%	100%	100%	100%	100%	100%

Chi-square =2.820 ($df=7, p=.901$)

Table 9- Prevalence of textual recategorization

Textual recategorization			
	We, You're not alone	Join	Total
N	23	8	31
Percentage	74.2%	25.8%	100%

Comparison of visual cues between medical conditions

The third RQ asked: "What components of reducing stigma are most prevalent in DTC print ads via visual cues?" The most common ads depicted recategorization (45.6%). This study found that 4 ads offered onset controllability and 36 ads offered recategorization. Among total 79 ads, these occupied as onset controllability (5.1%) and recategorization (45.6%). However, offset responsibility was not depicted as visual cues (See Table 10).

Compared with textual cues, onset controllability and offset responsibility visual cues were less depicted less than textual cues. However, visual cues depicted recategorization more than textual cues.

Table 10- Prevalence of visual cues (total ads =79)

	Category of visual cues		
	Onset	offset	recategorization
Ads N	4	0	36
Percentage	5.1%	0%	45.6%

The fourth RQ asked: “Are there significant differences in visual components of reducing stigma among medical conditions?”

Onset controllability. Onset controllability was depicted in only two categories of drugs: anti-depression (2) and bipolar disorder (2). Because only two medical conditions depicted onset controllability, chi-square analysis could not be conducted (See Table 11).

The Zoloft ads, which are one of the anti-depression drugs, only offered visual onset controllability among brands. The Zoloft ads depicted a symbolic medicalized diagram as visual onset controllability (50%). On the contrary, the Abilify ads, which are one of the bipolar disorder drugs, depicted biological organs as visual onset controllability (50%) (See Table 12).

Table 11- Visual onset controllability by medical condition

	Medical condition								Total
	Anti-depression	Bipolar disorder	Alzheimer's disease	ADHD	Anxiety disorder	Vaginal disease	Fungal skin infection	Erectile dysfunction	
	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	
Yes	2 13.3%	2 33.3%	0	0	0	0	0	0	4 5.1%
No	13 86.7%	4 66.7%	10 100%	8 100%	1 100%	4 100%	4 100%	31 100%	75 94.9%
Total	15 100%	6 100%	10 100%	8 100%	1 100%	4 100%	4 100%	31 100%	79 100%

Table 12- Prevalence of visual onset controllability

	Visual onset controllability				Total
	Biological organ	Graphic framing	Symbolic medicalized	diagram	
	N	2	0	2	4
	Percentage	50%	0	50%	100%

Offset responsibility. There were no ads which depicted offset responsibility as visual cues.

Recategorization. Recategorization is operationally defined as social context and relational context. First, ads depicting recategorization were divided into 5 medical conditions: anti-depression (6.7%), Bipolar disorder (33.3%), Alzheimer's disease (90.0%), ADHD (87.5%), and Erectile Dysfunction (54.8%). Noticeably, drugs for 4 medical conditions were included into mental illness. Alzheimer's disease is the most common ad which used recategorization. ADHD (87.5%) and Erectile Dysfunction (54.8%) were the next rank (See Table 13).

In terms of social context, the majority of social context was romance (66.7%) and the next is family (22.2%) among 36 ads (See Table 14). Relational context which was defined by the number of people showed that the majority of ads depicted dyad (86.1%) (See Table 15).

To compare the presence of recategorization among medical conditions, a chi-square analysis was also conducted. The results (See Table 13) showed that that recategorization was significantly different between (at the $p < 0.05$ level) medical conditions. Alzheimer's disease and ADHD offered recategorization more than anti-depression and bipolar disorder.

Table 13- Visual recategorization by medical condition

		Medical condition							
	Anti-depression	Bipolar disorder	Alzheimer's disease	ADHD	Anxiety disorder	Vaginal disease	Fungal skin infection	Erectile dysfunction	total
	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	N Percent	
Yes	1 6.7%	2 33.3%	9 90.0%	7 87.5%	0 0	0 0	0 0	17 54.8%	36 45.6%
No	14 93.3%	4 66.7%	1 10.0%	1 12.5%	1 100%	4 100%	4 100%	14 45.2%	43 54.4%
Total	15 100%	6 100%	10 100%	8 100%	1 100%	4 100%	4 100%	31 100%	79 100%

Chi-square =31.753($df=7$, $p=.000$)**Table 14- Prevalence of visual recategorization- social context**

Visual recategorization (social context)					
	Family	Romance	Recreation	Other	Total
N	8	24	3	1	36
Percentage	22.2%	66.7%	8.3%	2.8%	100%

Table 15- Prevalence of visual recategorization-relational context

Visual recategorization (relational context)				
	Alone	Dyad	Group	Total
N	2	31	3	36
Percentage	5.6%	86.1%	8.3%	100%

Research Question Results

RQ1: What components of reducing stigma are most prevalent in DTC print ads via textual cues?" 45 ads (57%) offered stigma reducing components as textual cues. The most prevalent textual cues was recategorization (32.9%).

RQ2: "Are there significant differences of textual components of reducing stigma among medical conditions?" There were significant differences in onset controllability among medical conditions: depression (66.7%), vaginal disease (50%) and Erectile Dysfunction (9.7%) and bipolar disorder (33.3%). Anti-depression ads with onset controllability were shown more often than vaginal disease ads and bipolar disorder. There were also significant differences in offset responsibility among medical conditions. Bipolar disorder (66.7%) and fungal skin infection (50.0%) offered offset responsibility more often than anti-depression (6.7%) and erectile dysfunction (3.2%). However, there was no difference for the presence of recategorization.

RQ3: What components of reducing stigma are most prevalent in DTC print ads via visual cues?" The most prevalent visual cues were recategorization (45.6%). Onset controllability was 5.1%. Visual cues depicted recategorization more than textual cues. However, there was no offset responsibility as visual cues.

RQ4: "Are there significant differences of visual components of reducing stigma among medical conditions?" Onset controllability was depicted in only two categories of drugs: anti-depression and bipolar disorder. Therefore, we could not find any differences in onset controllability among medical conditions. However, there were significant differences in the presence of recategorization among medical conditions. Fungal skin infection ads and Alzheimer's disease offered offset responsibility more than any other medical condition ads.

Discussion and Implication

Discussion

This study examined the content of DTC print advertising for 10 years from January, 1998 to December, 2008, specifically focusing on stigma reducing components such as onset controllability, offset responsibility, and recategorization. Consumers' health behavior may be motivated by both visual cues and textual cues that contained stigma reducing components.

First, the most significant thing was 63 DTC ads among total 79ads (79.7%) which are related to stigmatized disease provided at least one stigma reducing strategy. Even though onset controllability and recategorization were relatively low, these two components were more than offset responsibility. Moreover, there were no ads which

offered simultaneously all three components (onset controllability, offset responsibility and recategorization). However, the relative emphasizing of recategorization can cause an unbalance of stigma reducing components. This implies a meaning that Corrigan and Penn (1999)'s strategy of interventions to reduce stigma could not effectively function. When a balance of education and contact is conducted, stigma reducing intervention can be effective. Therefore, it required appropriate adjustments by onset controllability, offset responsibility and recategorization.

Second, onset controllability was an educational strategy which is one of the reducing stigma strategies. However, the result showed that there were not many ads which were offering onset controllability. Only four categories of drugs: anti-depression (66.7%), bipolar disorder (33.3%), vaginal disease (50%), and erectile dysfunction (9.7%) offered cause of illness.

Obviously, because information such as symptom of disease and side effects of the advertised drug occupied a large portion in main text in an ad, this could be an educational role. However, in terms of education strategy to reduce stigma, as this result showed, onset controllability occupied a small portion in DTC advertising.

Offset responsibility was another educational strategy to reduce stigma. However, the majority ads might not offer the offset responsibility. One of the reasons is that the limited characteristic of print ads is insufficient to explain to degree of people's coping efforts. However, as Schwarzer and Weiner (1991) mentioned, the sole onset controllability is insufficient to determine affective and behavioral reactions toward the stigmatized. Therefore, efforts to present offset responsibility in print DTC ads is needed. Explaining both onset controllability and offset responsibility could reduce stigma.

Moreover, insufficient offering of offset responsibility may evoke another problem. This will make people perceive DTC drug as quick solutions. An excessive emphasizing of effectiveness of DTC drugs without presenting another coping method will cause over-prescribing of DTC drugs.

Third, recategorization was a contact strategy to reduce stigma. Even though textual cues did not offer much recategorization (32.9%), visual cues offered recategorization (45.6%). Therefore, visual cues and textual cues play a reciprocal role in offering recategorization components.

Conclusion

Even though the past ten years of DTC ads of a stigmatized disease since 1998 have taken efforts to reduce stigma, more efforts are needed for public health communication. First, this study showed that onset controllability as education strategy was relatively low. The majority of medical conditions did not offer onset controllability. Only medical conditions (anti-depression and bipolar disorder) and vaginal disease offered onset controllability as both textual cues and visual cues. This study can suggest this skewed use of onset controllability among medical conditions has to be changed. The offering of onset controllability in other medical condition ads is needed.

Second, because offset responsibility is another education strategy, the sole explanation of onset controllability without offset responsibility cannot be effective as educational strategy.

Third, recategorization was offered as relatively low as textual cues. However, visual cues supplemented the textual cues. These visual cues played a role in vicarious contact strategy. Therefore, they are reciprocal to each other. The medical condition

which depicted recategorization most often compared with other medical conditions was mental illness. According to the medical condition, there was a difference of preference of components.

In conclusion, only half of ads which were related to stigmatized medical condition offered stigma reducing strategy. This amount means that efforts of DTC ads related to stigmatized medical conditions are insufficient in order to reduce stigma. Moreover, even ads which offered stigma reducing strategy focused on overwhelming unbalanced components. Component balanced ads will be needed in order to maximize the ad's effectiveness as a public health communication.

Implication

This paper can contribute to both practitioners and consumers for two reasons. First, this paper examined a content-analysis of the past ten years of DTC ads of a stigmatized disease since 1998. This evaluated contents of ads after the FDA's relaxed regulation. The findings from this sample represented strategies useful in reducing stigma and influence consumers' behaviors while also showing how marketers have made efforts to influence those consumers.

Second, this paper provided theoretical and methodological frameworks for investigating features of DTC advertising. This paper examined the contents that are being used in DTC advertising related to stigma as to whether it educates consumers to reduce consumers' stigma through applying the Attribution theory and Recategorization theory. Until now, despite the importance of evaluating content of DTC advertising, there have been few studies about evaluating content of DTC advertising based on the theories.

This paper examined which persuasive health messages were used in DTC advertising to reduce stigma and how DTC advertising considered both visual cues and textual cues used. This paper especially examined DTC advertising related to stigmatized diseases: mental illness (anti-depression, bipolar disorder, Alzheimer's disease, ADHD, and anxiety disorder), vaginal disease, fungal skin infection, and Erectile Dysfunction DTC print advertisements as to whether they have offered reducing stigma components by using *Time* magazines.

This study suggests significant educational as well as strategic marketing implications. First, this study begins with educational (scholarly) implication. The ongoing debate of DTC advertising focuses on whether DTC advertising is a potential area for health communication interventions. To the extent that DTC advertising influences consumers' health behavior, DTC advertising needs to be designed to enable consumers to take advantage of DTC advertising's beneficial influences and to avoid its negative effects by providing information and fulfilling educational functions. This study also suggests the need for health communication programs to be designed to make the public more critical consumers of DTC advertising for consumers. If the campaign is strategically planned based on carefully designed messages, then the chances of a successful campaign are maximized.

Based on this theory, finding the contents that are under- or over- utilized, practitioners can design effective messages that will appeal to consumers and pass on health messages. Consumers with high stigma and passive behavior will change their behavior more actively by reducing stigma. Moreover, through this paper, if the gap between theoretical knowledge and message design can be narrowed, it can be very

beneficial. If the print DTC advertising has made efforts to reduce barriers like stigma and to enhance consumers' self-efficacy, it can change the view toward DTC advertising from negative to more positive.

This study also suggests marketing implications. Reducing stigma leads to positive marketing outcomes. As consumers become gradually more familiar with the stigmatized disease drug, and access to treatment becomes easier, more demands of DTC drugs increase. This causes products' differentiations or difference between brands. This implies how valuable DTC advertising is for the pharmaceutical industry.

Limitation and Future study

First, a limitation of content analysis is that it cannot demonstrate how consumers perceive and interact with media. Therefore, through this study, future study by experiment is needed. This study can be a guideline toward future study that will examine which content elements of DTC advertising can increase or decrease consumers' stigma perceptions. This also enables to provide guidelines to FDA. This relates to social implications of DTC advertising which transfers more broadly into implications for public health. This study suggests the possibility that twisted and exaggerated perception of depression can be changed through DTC advertising. Therefore, the effects of specific content elements in DTC advertising on reducing stigma should be considered an important research topic with implications for pharmaceutical marketing strategies as well as public health. Second, this study is limited to print DTC advertising.

Second, this study is limited to print DTC advertising. Therefore, a sample of this study cannot represent contents of DTC advertising. Future study is needed to examine other media such as television and the Internet.

Third, this study sampled print DTC ads from 1998 to 2008. This period is valuable but, in order to examine the effects of FDA's relaxed regulation whether FDA's regulation influence to content of DTC ads or not, further study is needed by comparing DTC ads after 1998 with DTC ads before 1998.

Fourth, future study also is needed to examine the impact of the way presentation of prescription drug has because the majority ads offers prescription drug as the way of treatment without offering offset responsibility. Understanding how consumers perceive the prescription drug according to the way of positioning and whether this perception causes stigma reduction or not will suggest new strategies for reducing stigma.

References

- Abel, G. A., Lee, S. J., & Weeks, J. C. (2007). Direct-to-Consumer Advertising in Oncology: A content analysis of print media. *Journal of Clinical Oncology*, 25(10), April 1, 1267-1271.
- Advertising Age (2006). Magazine circulation rankings. Retrieved from February, 2009 http://adage.com/datacenter/article?article_id=106355.
- Allison-Ottee, S., Ruffin, K., Allison, K., & Ottee, C. C. (2003). Assessing the impact of direct-to-consumer advertisements on the AA patient: A multitude survey of patients during the office visit. *Journal of the National Medical Association*, 95(2), 120-131.
- Amador, X. F., Strauss, D. H., Yale, S. A., & Gorman, J. M. (1991). Awareness of illness in schizophrenia. *Schizophrenia Bulletin*, 17, 113-132.
- American Stroke Association (Producer). (2005). Early stroke response [Television Public Service Announcement]. Dallas, TX: Author.
- Anesbury, T., & Tiggemann. M. (2000). An attempt to reduce negative stereotyping of obesity in children by changing controllability beliefs. *Health Education Research*, 15(2), 145-152.
- Anon (1998). *Pushing ethical pharmaceuticals direct to the public*. Lancer, 351: 921.
- Ball, J. G., Liang, A., & Lee, W. (2008). Reducing stigma through Direct-to-Consumer pharmaceutical advertising: A content analysis of television commercials. The Association for Education in Journalism & Mass Communication annual convention in Chicago, IL on August 9, 2008.

- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman.
- Barth, K. R., Cook, R. L., Downs, J. S., Switzer, G. E., & Fischhoff, B. (2002). Social stigma and negative consequences: Factors that influence college students' decisions to seek testing for sexually transmitted infections. *Journal of American College Health*, 50(4), 153.
- Bergman, M. E., & Chalkley, K. M. (2007). "Ex" Marks a spot: The stickiness of dirty work and other removed stigmas. *Journal of Occupational Health Psychology*, 12(3), 251-265.
- Bell, R. A., Wilkes, M. S., & Kravitz, R. L. (2000). The educational value of consumer-targeted prescription drug print advertising. *The Journal of Family Practice*, 49(12), 1092-1098.
- Birdwhistell, R. (1955). Background to kinesis. *ETC*, 13, 10-18.
- Blankenhorn, K., Duckwitz, N., & Kerr, M. (2001). Power to the people. *Medical Marketing & Media*, 36(8), 66-70.
- Bradley, L. R., & Zito, J. M. (1997). Direct-to-consumer prescription drug advertising. *Medical Care*, 35, 86-92.
- Brewer, M. B. (1979). Ingroup bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin*, 86, 307-324.
- Brewer, M. B., & Miller, N. (1984). Beyond the contact hypothesis: Theoretical perspectives on desegregation. In N. Miller & M. B. Brewer (Eds.), Groups in contact: *The psychology of depression*, (281-302), Orlando, FL: Academic Press.

- Brockington, I., Hall, P., Levings, J., & Murphy, C. (1993). The community's tolerance of the mentally ill. *British Journal of Psychiatry*. 162, 93-99.
- Brown, R. J. (1984). The effects of intergroup similarity and cooperative vs. competitive orientation on intergroup discrimination. *British Journal of Social Psychology*, 23, 21–33.
- Calfee, J. E. (2002). Public policy issues in direct-to-consumer advertising of prescription drugs. *Journal of Public Policy & Marketing*, 21(2), 174-193.
- Cappella, J. N., Fishbein, M., Hornik, R., Ahern, R. K., & Sayeed, S. (2001). Using theory to select message in antidrug media campaigns: Reasoned action and media priming. In R.E. Rice & C. K. Atkin (Eds.), *Public communication Campaigns*. (pp. 214-230) Thousand Oaks, CA: Sage.
- Centers for Disease Control and Prevention (2004). Genital HPV Infection Fact Sheet. Atlanta, GA;CDC National Prevention Information Network; Retrieved April 10. 2008. From www.cdc.gov/nchstp/dstd/stats_Trends/1999SurvRpt.htm
- Cline, R. J., & Young, H. N. (2004). Marketing drugs, marketing health care relationship: A content analysis of visual cues in Direct-to-Consumer prescription drug advertising. *Health Communication*, 16(2), 131-157.
- Corrigan, P. W. (2000). Mental health stigma as social attribution: Implications for research methods and attitude change. *Clinical Psychology: Science and Practice*, 7, 48-67.
- Corrigan, P. W., Larson, J., Sells, M., Niessen, N., & Watson, A. C. (2007). Will filmed presentations of education and contact diminish mental illness stigma? *Community Mental Health Journal*, 43(2), 171-181.

Corrigan, P. W., & Penn, D. L. (1999). Lessons from social psychology on discrediting psychiatric stigma. *American Psychologist*, 54, 765-776.

Corrigan, P. W., River, L. P., Ludin, R. K., Wasowski, K. U., Campion, J. Mathisen, J., Goldstein, H., Gagnon, C., Bergman, M., & Kubiak, M. A. (1999). Predictors of participation in campaigns against mental illness stigma. *Journal of Nervous and Mental Disease*, 187, 378-380.

Corrigan, P. W., Rowan, D., Green, A., Lundin, R., River, P., Uphoff-Wasowski, K., White, K., & Kubiak, M. A. (2004). Challenging two mental illness stigmas: Personal responsibility and dangerousness. *Schizophrenia Bulletin*, 28(2), 293-309.

Corrigan, P. W., Thompson, V., Lambert, D., & et al (2003). Perceptions of discrimination among persons with seriousmental illness. *Psychiatric Services*, 54, 1105-1110.

Corrigan, P. W., & Watson, A. C. (2002). The paradox of self-stigma and mental illness. *Clinical Psychology*. 9, 35-53.

Corrigan, P. W., & Watson, A. C. (2004). At issue: Stop the stigma: Call mental illness a brain disease. *Schizophrenia Bulletin*, 30(3), 477-479.

Crandall, C. S. (1994). Prejudice against fat people: ideology and self-interest. *Journal of personality and social psychology*, 66, 882-894.

Crocker, J., Major, B., & Steele, C. (1998). Social stigma. In: Gilbert, D. T., Fiske, S. T., & Lindzey, G. (eds). *Handbook of Social Psychology*. 4th edn, 2. McGraw-Hills: Boston, 504-553.

- Davis, J.J. (2000). Riskier than we think? The relationship between risk statement completeness and perceptions of direct-to –consumer advertised prescription drugs. *Journal of Health Communication*, 5, 349-369.
- Devine, P. G. (1995). Prejudice and out-group perception. In A. Tesser (Ed.), *Advanced Social Psychology*, 466-524, New York: McGraw-Hill.
- Devine, P. G., & Hirt, E. R. (1989). Message strategies for information campaigns: A social psychological analysis. In C. T. Salmon (Ed.), *Information campaigns: Balancing social values and social change* (pp. 229-258). Newbury Park, CA: Sage.
- Devine, P. G., Plant, E. A., & Harrison, K. (1999). The problem of “Us” versus “Them” and AIDS stigma. *The American Behavioral Scientist*, 42(7), 1212-1228.
- Donohue, J. M , Cevasco, M., & Rosenthal, M. B. (2007). A decade of direct-to-consumer advertising of prescription drugs. *New England Journal of Medicine*, 357(7), 673-681.
- Elliott, C. (2003) *Better than Well: American Medicine Meets the American Dream*, New York: W.W. Norton.
- Findlay, S. D. (2001). Direct-to-consumer promotion of prescription drugs: Economic implications for patients, payers, and providers. *PharmacoEconomics*, 19(2), 109-119.
- Frosch, D. L., Krueger, P. M., Hornik, R. C., Cronholm, P. F., MSCE, & Barg, F. K. (2007). Creating demand for prescription drugs: A content analysis of television direct-to-consumer advertising. *Annals of Family Medicine* 5:6-13 (2007).

Gaertner, S. L., & Dovidio, J. F. (2000). *Reducing intergroup bias: The common ingroup identity model*. Philadelphia: The Psychological Press/Taylor & Francis.

Gaertner, S. L., & Dovidio, J. F., Anastasio, P. A., Bachman, B. A., & Rust, M. C. (1993).

The common ingroup identity model: Recategorization and the reduction of intergroup. In W. Stroebe & M. Hewstone (Eds.), *European review of social psychology* (Vol. 4, pp. 1–26). New York: Wiley.

Goffman, E. (1963). *Stigma: Notes of the management of spoiled identity*. Englewood Cliffs, NJ: Prentice-Hall.

Grow, J. M., Park, J., & Han, X. (2006). “Your life is waiting!” Symbolic meanings in Direct-to-Consumer antidepressant advertising. *Journal of Communication Inquiry*, 30(2), 163-188.

Hewstone, M., Bond, M. H., & Wan, K. C. (1983). Social facts and social attributions: The explanation of intergroup differences in Hong Kong. *Social Cognition*, 2, 142–157.

Herek, G. M., & Capitanio, J. P. (1997). AIDS stigma and contact with persons with AIDS: Effects of direct and vicarious contact. *Journal of Applied Social Psychology*, 27 (1), 1.

Hollon, M. F. (1999). Direct-to-consumer marketing of prescription Drugs: Creating consumer demand. *The Journal of the American Medical Association*. 281(4):382-384.

Holmer, A. F. (1999). Direct-to-consumer prescription drug advertising builds bridges between patients and physicians. *Journal of American Medical Association*, 281(4), 380-382.

- Holmer, A. F. (2002). Direct-to-consumer advertising – Strengthening our health care system. *New England Journal of Medicine*, 346, 526-528.
- Holmes, E. P., Corrigan, P. W., Williams, P., Canar, J., & Kubiak, M. (1999). Changing public attitudes about schizophrenia. *Schizophrenia Bulletin*, 25, 447-456.
- Howard, J. W., & Rothbart, M. (1980). Social categorization and memory for in-group and out-group behavior. *Journal of Personality and Social Psychology*, 38, 301–310.
- Huh, J. & Cude, B. J. (2004). Is the information “Fair and Balanced” in direct- to- consumer prescription drug Websites? *Journal of Health Communication*, Vol 9. 529-540.
- Impotence Association (1997). Survey 1997. London:Taylor Nelson AGB Healthcare.
- Kalichman, S. C., Russell, R. L., Hunter, T. L., & Sarwer, D. B. (1993). Earvin “Magic” Johnson’s HIV serostatus disclosure: Effects on men’s perceptions of AIDS. *Journal of Consulting and Clinical Psychology*, 61, 887-891.
- Kaphingst, K.A. & Dejong, W. (2004). Market Watch, The educational potential of direct-to-consumer prescription drug advertising, *Health Affairs*, 23(4), 143-150
- Kaphingst, K. A., Rudd, R. E., Dejong, W., & Daltroy, L.H. (2004). Comprehension of information in three direct-to-consumer television prescription drug advertisements among adult with limited literacy. *Journal of Health Communication*, 10, 609-619.
- Kelly, P. (2004). Perspective: DTC advertising’s benefits far outweigh its imperfections. *Health Affairs*. 10,1377, 246-248.

- King, M., Dinos, S., Shaw, J., *et al.* (2007). The Stigma Scale: development of a standardised measure of the stigma of mental illness. *British Journal of Psychiatry* 190, 248–254.
- Kopp, S.W, & Bang, H. (2000). Benefit and risk information in prescription drug advertising: review of empirical studies and marketing implications, *Health Marketing Quarterly*, 17(3), 39-56.
- Link, B. G. & Cullen, F.T. (1986). Contact with the mentally ill and perceptions of how dangerous they are. *Journal of Health and Social Behavior*, 27, 289-303.
- Link, B. G. & Phelan, J. C. (2001). Conceptualizing Stigma. *Annual review of sociology*, 27(1), 363.
- Macias, W. & Lewis, L. S. (2003). A content analysis of Direct-to-Consumer (DTC) prescription drug web sites. *Journal of Advertising*, 32(4), 43-56.
- Medical Marketing & Media (MM&M). pharma report 2008. Retrieved February, 2009 from www.mmm-online.com.
- Melman, A, Gingell, J.C. (1999). The epidemiology and pathophysiology of erectile dysfunction. *J Urol.* 161:5-11.
- Moreland, R.B., Hsien, G., Nakane, M., & Brioni, J.D. (2001). The biochemical and neurologic basis for the treatment of male erectile dysfunction. *The Journal of Pharmacology and Experimental Therapeutics*, 296(2), 225-234.
- Nier, J. A., Gaertner, S. L., Dovidio, J. F., Bunker, B. S., Ward, C. M., & Rust, M. C. (2001). Changing interracial evaluations and behavior: The effects of a common group identity, *Group Processes Intergroup Relations*, 4(4), 299-316.

- NIHCM (National Institute for Health Care Management Research and Education Foundation). (2001). Prescription drugs and mass media advertising, 2000. Retrieved November 30, 2005, from www.nihcm.org
- Perri, M., & Dickson, W. M. (1988). Consumer reaction to a direct-to-consumer prescription drug advertising campaign. *Journal of Health Care Marketing*, 8(2), 66-69.
- Rush, L. L. (1998). Affective reactions to multiple social stigmas. *Journal of Social Psychology*, 138, 421-430.
- Schmidt, G., & Weiner, B. (1988). An attribution-affect-action theory of behavior: Replications of judgements of help-giving. *Personality and Social Psychology Bulletin*, 14, 610-621.
- Schwarzer, R., & Weiner, B. (1991). Stigma controllability and coping as predictors of emotions and social support. *Journal of Social and Personal Relationships*, 8, 133-140.
- Sherif, M., Harvey, O. J., White, B. J., Hood, W. R., & Sherif, C. W. (1961). *Intergroup conflict and cooperation: The Robbers Cave experiment*. Norman, OK: University of Oklahoma Book Exchange.
- Sirey, J., Bruce, M. L., Raue, P., et al. (2001). Psychological barriers in young and older outpatients with depression as predictor of treatment discontinuation. *American Journal of Psychiatry*, 158; 479-481.
- Stephenson, M. T. (2002). Anti-drug public service announcements targeting parents: An analysis and evaluation. *Southern Communication Journal*, 67(4), 335-350.

- Stephenson, M. T., & Quick, B. L. (2005). Parent ads in the national youth anti-drug media campaign. *Journal of Health Communication*, 10, 701-710.
- Stevenson, R. W. (1991, November 8). Magic Johnson ends his career, saying he has the AIDS virus. *New York Times*, pp. A1, B 14.
- Tarango, D. (2007). Two case reports: Treating common nail diseases and injuries. *The Journal of Science and Healing*, 3(5), 503-505
- Weiner, B. (1980). A cognitive (attribution)-emotion-action model of motivated behavior: An analysis of judgements of helping-giving. *Journal of Personality and Social Psychology*, 39, 186-200.
- Weiner, B. (1985). An attributional theory of achievement motivation and emotion. *Psychological Review*, 92, 548-573.
- Weiner, B. (1986). *An attributional theory of motivation and emotion*. Berlin: Springer-Verlag.
- Weiner, B. (1988). Attribution theory and attribution therapy: Some theoretical observations and suggestions. *British Journal of Psychology*, 77, 99-104.
- Weiner, B. (1993). On sin versus sickness: A theory of perceived responsibility and social motivation. *American Psychologist*, 48, 957-965.
- Weiner, B. (1995). *Judgments of responsibility: A foundation for a theory of social conduct*. New York: Guilford Press.
- Weiner, B., Perry, R.P., & Magnusson, J. (1988). An attributional analysis of reactions to stigmas. *Journal of Personality and Social Psychology*, 55, 738-748.
- Wiese, H. J., Wilson, J. F., Jones, R. A., & Neises, M. (1992). Obesity stigma reduction in medical students. *International Journal of Obesity*, 16, 859-868.

Zucker, G. S., & Weiner, B. (1993). Conservatism and perceptions of poverty: An attributional analysis. *Journal of Applied Social Psychology*, 23, 925-943.

Appendix

1. Publication: time magazine
2. Period: January 12, 1998 – December 22, 2008
3. Direct-to-Consumer advertising
4. Unit of analysis; each advertisement

Coding scheme

1. Factorial information of advertising

1. Category of drug

- (1) Anti-depression (2) bipolar disorder (3) Alzheimer's disease (4) ADD (5) anxiety disorder
(6) Vaginal disease (7) fungal skin infection (8) Erectile Dysfunction (ED)

1-1. Brand name

- (1) Prozac 1 (2) Prozac 2 (3) Prozac 3
(4) Paxil 1 (5) Paxil 2 (6) Paxil 3
(7) Cymbalta 1 (8) Cymbalta 2 (9) Cymbalta 3 (10) Cymbalta 4 (11) Cymbalta 5 (12) Cymbalta 6
(13) Wellbutrin XL 1
(14) Zoloft 1 (15) Zoloft 2 **(1-15; anti-depression)**
(16) Abilify 1 (17) Abilify 2 (18) Abilify 3 (19) Abilify 4 (20) Abilify 5
(21) Seroquel 1 **(16-21; bipolar disorder)**
(22) Aricept 1 (23) Aricept 2 (24) Aricept 3 (25) Aricept 4 (26) Aricept 5 (27) Aricept 6
(28) Aricept 7 (29) Aricept 8 (30) Aricept 9 (31) Aricept 10 **(22- 31; Alzheimer's disease)**
(32) ADDERALL XR 1 (33) ADDERALL XR 2 (34) ADDERALL XR 3 (35) ADDERALL XR 4
(36) ADDERALL XR 5
(37) Vyvanse 1 (38) Vyvanse 2
(39) Strattera 1 **(32-39; ADHD)**

(40) Buspar 1 (***anxiety disorder***)

(41) Diflucan 1

(42) Gardasil 1

(43) PREMPRO 1 (44) PREMPRO 2 ***(41-44; vaginal disease)***

(45) Lamasil 1 (46) Lamasil 2 (47) Lamasil 3 (48) Lamasil 4 ***(45-48; fungal skin infection)***

(49) Viagra 1 (50) Viagra 2 (51) Viagra 3 (52) Viagra 4 (53) Viagra 5 (54) Viagra 6 (55)

Viagra 7 (56) Viagra 8 (57) Viagra 9 (58) Viagra 10 (59) Viagra 11 (60) Viagra 12 (61)

Viagra 13

(62) Viagra 14 (63) Viagra 15 (64) Viagra 16 (65) Viagra 17 (66) Viagra 18 (67) Viagra 19

(68) Viagra 20 (69) Viagra 21 (70) Viagra 22 (71) Viagra 23

(72) Cialis 1 (73) Cialis 2 (74) Cialis 3 (75) Cialis 4 (76) Cialis 5 (77) Cialis 6

(78) Levitra 1 (79) Levitra 2 ***(49-79; Erectile Dysfunction)***

1-2. Generic Product name

(1) Fluoxetine hydrochloride (2) paroxetine HCl (3) sertraline HCl (4) duloxetine HCl

(5) bupropion HCl (6) aripiprazole (Abilify) (7) quetiapine fumarate (Seroquel)

(8) donepezil HCl (Aricept) (9) mixed salts of a single-entity amphetamine product
(ADDERALL XR)

(10) lisdexamfetamine dimesylate (Vyvanse) (11) atomoxetine HCl (Strattera) (12) buspirone HCl

(13) Fluconazole tablet (Diflucan) (14) Quadrivalent Human Papillomavirus vaccine

(15) conjugate estrogens/methoxyprogesterone acetate tablets (PREMPRO)

(16) terbinafine HCl tablets (17) sildenafil citrate (18) tadalafil (Cialis) (19) vardenafil HCl

1-3. Manufacturer

(1) Lilly ICOS, Indianapolis, Ind (2) GlaxoSmithKline, Middlesex, UK (3) Pfizer, New York, NY

- (4) Otsuka America Pharmaceutical, Inc. (Abilify)
- (5) AstraZeneca (Seroquel)
- (6) Shire
- (7) Merck & Co. Inc
- (8) Wyeth Pharmaceutical Inc.
- (9) Novartis

1-4. type of cues

- (1) visual cues
- (2) textual cues

(2) Characteristics of Content

2-1. Categories of visual cues

- (1) onset controllability
- (2) offset responsibility
- (3) recategorization

2-1-1. onset controllability

- (1) Picture of biological organs or symptoms
- (2) Graphical framing of disease as chemically bound
- (3) Symbolically informational medicalized diagram

2-1-2. offset responsibility (effort to coping with)

- (1) Efforts to cope with (such as exercising, therapy)

2-1-3. recategorization

- (1) Social context (two or more people)
 - (1.1) Family (depicting people from two generation)
 - (1.2) Romance (depicting only two people engaged in embracing or mutual gazing)
 - (1.3) Work (reflected in work-related clothing and /or equipment)
 - (1.4) Recreational (relaxing)
 - (1.5) Other (indeterminate)
- (2) Relational context (number of people depicted)
 - (2.1) alone
 - (2.2) dyad
 - (2.3) group

2-2. Categories of textual cues

- (1) Onset controllability
- (2) Offset responsibility
- (3) Recategorization

2-2-1. onset controllability

- (1) Cause of illness as biological or biomedical problem
- (2) That's not true (change attribution)

2-2-2. offset responsibility

(1) coping with

- (1) implied coping effort
- (2) direct coping effort

(2) Solution

- (1) Not Presenting other alternative ways
- (2) Presenting other alternative ways

(2-1) way of medicine positioning

- (1) A prescription drug (one of drug)
- (2) The prescription drug
- (3) Only one prescription drug
- (4) Best #1 prescription drug
- (5) Best possible
- (6) Better
- (7) Especially good
- (8) Good
- (9) Subjective qualities

2-2-3. recategorization

- (1) We, our, us or you are not alone, You're not different person
- (2) Join

