SEX, DRUGS, AND DIRECT-TO-CONSUMER
PHARMACEUTICAL ADS

by

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ABSTRACT

In medical care and diagnoses, there is a clear divide and demonstrable bias in the way that men and women are prescribed medications and in how they are cared for. Women’s heart health issues go under diagnosed, while men have their mental health issues overlooked. This study aims to determine whether the biases present in medical settings are apparent in medically related prescription drug advertisements as well.

A content analysis was performed to examine this phenomenon. A sample of 360 magazines were examined, with 24 issues of 15 magazines across 3 categories, based upon the publication’s target audience (men’s, women’s and general interest), making up the sample. After a total of 1,262 direct-to-consumer pharmaceutical advertisements were coded out of 14,740 total advertisements, a notable pattern was uncovered. This study showed a significant bias in regards to which magazines were selected to market DTC prescription drugs, as well as in the sex of characters used to market such drugs.

These trends may lead to the continuation of biased diagnoses and care of men and women in the medical field. And while further research is required to determine the impacts of these biases, it is clear that these are present in DTC prescription drug advertising.
Chapter 1

INTRODUCTION

Think about a trip to a restaurant. It’s likely that without much effort you can envision how the whole process will happen. You will show up, wait to be seated, peruse the menu, be brought drinks, peruse some more, order, wait for your food, eat, pay the check, and leave. If you can envision the whole process, you are not clairvoyant; you simply understand the script that goes along with going to a restaurant. According to Bozinoff (1982), the knowledge that is stored in our long-term memory is called a schema. Schemata are “the large sets of well-structured cognitions that have been learned over time as experience accumulates” (Bozinoff, 1982). Essentially, an individual’s long-term memory is filled with schemata, which give individuals a standard by which to compare events and objects in their daily lives. Scripts are layouts of how certain events are supposed to go, and are formed when we order various schemata in our minds (Bozinoff, 1982). Over time, people come to rely on these generic standards to help them decide how to act and form expectations (Leigh & Rethans, 1983). These scripts and schemas tell people how to behave and what types of behavior are expected of them. Scripts and schemas also tell different people to behave different ways. In our society men and women follow a different set of societal rules and norms. These gender norms are some of the most pervasive norms in our society.
In America today there are a number of gender norms and other influences that subtly dictate our lives. Through a myriad of media messages men and women are told how to act, what is expected of them, and reminded of how they are seen in society. One of the places that gender norms are most pervasive is in advertisements. This can be seen both in the types of advertisements (based on what the advertisement is for) and in the roles men and women are fulfilling within them. For example, according to a study done by Michael Prieler (2016), men are more commonly shown in the workplace, while women are more likely to be shown in the home in television advertisements. According to social cognitive theory, individuals learn social behavior through observation (Prieler, 2016). Therefore it stands to reason that advertisements don’t only sell various products but they also sell audience members on the lifestyles and behaviors they depict. The concept of “commercial realism” states that advertisements help to inform viewers about what “real life” is like. The way that male and female relationships are presented in commercials is presumed to reflect real life (Griffin, Viswanath & Schwartz, 1994), and as a result may actually inform behaviors from men and women. In this vein, it would appear that while gender norms shape advertisements, advertisements shape gender norms as well.

These gender norms have far reaching impacts, including within the medical arena. It has been found that men and women are treated differently in terms of healthcare. When presenting with the same symptoms men and women are often given different diagnoses and recommendations for how to proceed. In a study it was found that when doctors were given identical symptom lists with the only difference being what
they are told is the sex of the patient, they attributed the symptoms present in patients they believed to be female as emotional, while men were more “comprehensively investigated” and were presumed to be suffering from physical symptoms (Malterud, 1999). Additionally, another study found that when 181 patients complained of headaches, dizziness, fatigue, breast pain, and back aches, men had far more comprehensive investigative work done to find the cause of their issues than women (Armitage, Schneiderman & Bass, 1979). With this being said the case, it would be interesting to see the gender norms present in advertisements for direct-to-consumer (DTC) and over-the-counter (OTC) medications to determine if the same stereotypes are present. The representation of sex in such advertisements could have many impacts. In fact, according to Krupka and Vener (1985), there is an actual relationship between popularly advertised drugs and prescriptions filled. This implies that advertisements actually impact which drugs are used by consumers, so it is not unreasonable to conclude that the extent to which advertisements resonate with audiences can change the way they see themselves and determine which drugs they believe they might need. Additionally, Lupton (1993) makes the point that advertisements use the shared knowledge of individuals in a society to put symbolic meaning on products. By drawing on our values (wanting to be better for our kids, wanting to get better so we can be more productive at work), advertisements manipulate us into believing that we need what they are selling.

It has been found to be the case, that higher percentages of women are known to take prescription drugs than their male counterparts. The National Center for Health Statistics reports that from 2011 to 2014 51.2% of women reported taking a prescription
drug within the past 30 days, compared to only 42.6% of men. When the question was if individuals took three or more prescription drugs in the past 30 days, the gap closed to 19.7% of men, but women still had higher reports of 23.2%. And finally, 12.0% of women said that they had taken five or more prescription drugs in the past 30 days, to men’s 9.7% (CDC, 2017b). This might be the cause, effect, or both of the way that prescription drugs are marketed to men and women.

This study hopes to explore the difference in medical advertisements targeted towards men and women. It is presumed that women will be bombarded with more direct-to-consumer pharmaceutical advertisements than men, being that it is more common, socially accepted, and expected for women to require medication. In addition it is believed that there will be a difference in the types of medical conditions and medications advertised to each group. This will highlight the societal issue of over-medicating women, as well as under-treating men for mental health issues and women for cardiovascular/heart health issues.

**Drug Advertising and the Sex of the Target Audience**

There are a number of reasons to expect a disparity in advertisements targeted to men and women. Assumptions about men and women’s willingness or need for certain products might be a factor. The societal norm that women are weaker and in need of help, as compared to the common stereotype that men are stronger and more powerful, might imply that women are more in need of medical interventions, including medication. Advertisements tend to do more than we think. They do not merely sell products but tend
to sell lifestyles, societal ideals, and societal norms as well (Griffin, Viswanath & Schwartz, 1994).

These advertisements usually play on common desires, or the presumed common desires, of particular groups of people. Men aren’t commonly shown desperately searching for a way to treat allergy symptoms so that they can get back to their children, and women aren’t commonly shown wanting to get over their arthritis pain so they can get back to their softball league. Advertisements target their desired demographic by utilizing common gender norms so that they can convince audience members to seek out their product. There are a number of impacts that advertisements, particularly drug advertisements, may have on audience members and potential buyers of the products.

First of all, depending on the sex of the actor in the ad (the “character” being the primary focus of the advertisement), it is possible that men or women will not think that a product is meant for them. A series of 2010 studies lead JJ Iguarta to conclude that the ability to identify with characters does play a role in the persuasive process (Iguarta, 2010). Therefore, if characters in an advertisement are not similar enough to audience members for them to identify with, it is possible that the advertisements will not be persuasive and effective to those not identifying. In addition, even though many drugs are created for use by both men and women, such gender norms are perpetuated even within the medical community.

A 2005 content analysis done by Curry and O’Brien (2005) found that advertisements in medical publications were highly gendered. In comparing cardiovascular drug advertisements to antidepressant drug advertisements there was a
huge disparity in male/female representation. Cardiovascular advertisements had male/majority male representation 91.7% of the time, and antidepressants had female/majority female representation 85.7% of the time (Curry & O’Brien, 2005). This may be for many reasons, and can have a number of effects on the audience and on society. First of all, if women are constantly shown in drug advertisements the implication is that they are weaker and more frequently in need of medical help. It is possible that men are shown less in drug advertisements because they seek out medical attention less frequently, but it is also possible that the lack of visibility of men in need of health care makes men feel less masculine or manly when they find themselves in need. Men go to the doctor far less frequently than women, which is believed to be a result of the gender norms our society holds about men. Data from the Centers for Disease Control’s (CDC) 2013 National Ambulatory Medical Care Survey (NAMCS), from a sample of 11,212 physicians in targeted states, showed that of 922,596 doctor office visits, 57.9% of visitors were female and 42.1% were male. In terms of preventative care visits (183,787), the percentage of female visitors jumps to 64.2% and male visitors drop to 35.8% (CDC, 2017a).

Societal norms dictate that men are supposed to be strong and independent, which is inconsistent with the need for help assumed when one seeks out a medical professional. Interestingly, a study by Emslie, Hunt and Watt (2001) makes the interesting point that across cultures we tend to think of the heart differently when we think of men and women. When we think of the heart in terms of women, it conjures up warm images of compassion and love. Alternately, the masculine side of the heart it described as being
more machinelike, with images of engines and “clockwork mechanisms” (Emslie et al., 2001, p. 207). Emslie et al., make the point that more feminine and emotional causes, being heartsick or having a broken heart, are less frequently seen as being the cause of a heart attack. More commonly we hear more “male” depictions of heart problems. People require pacemakers (new machinery) to fix what is broken, or we hear people say that someone’s heart “just gave out.” These all conjure up the aforementioned more masculine imagery. When thinking about coronary heart disease, the associations are not of the more feminine love/compassion types but of the masculine breaking down of machinery types. This thought process was followed by a study where interviews were conducted to assess who participants saw as candidates for heart problems. Of the 31 participants, only one discussed a woman. Additionally, when asked who the “last person” they would expect to have a heart attack would be, respondents still almost exclusively mentioned men (Emslie, et.al., 2001). This implies that women aren’t even thought of as being capable of having heart problems. Men are thought of as being most likely AND most unlikely to have heart attacks; women are left out of the equation almost entirely. Ultimately, however, heart disease is the number one killer among both men and women (CDC, 2017c); ideally, heart disease advertisements would be reflecting this, but this is simply not the case.

According to Maas and Appelman (2010), the perceived risk of heart disease for women is underestimated, due to the false assumption that females have some sort of inherent protection against heart disease. Additionally, the methods of interpreting coronary artery disease can be different for women and men as a result of differing
symptomology between the two. Despite cardiovascular disease being the leading cause of death for women, it still goes underdiagnosed and undertreated. The fact that it goes underdiagnosed and treated leads to a disparity in representation for women in clinical trials, as well as subpar treatment. In addition, women were found to have less interventional procedures and diagnostic angiograms than men (Maas & Appelman, 2010).

Another aspect of gender in medical advertisements is the roles that men and women are seen playing. Many advertisements show what the afflicted will be able to “get back to” when they get well. Curry and O’Brien (2005) found that there was a clear discrepancy in activity/passivity by sex. Throughout the advertisements that they assessed, they noted that men in the advertisements were almost always portrayed as being active, while women, particularly older women, were rarely shown being physically active. These types of gender norms present their own set of issues, in that they continue to tell people what is expected of them by virtue of their sex. Though the gender roles played out in these commercials are unlikely to impact the actual health of audience members, it will be interesting to note the types of people expected to use the drugs advertised.

Ultimately, scripts, when activated, direct behavior (Bozinoff, 1982). Being that scripts direct behavior, it should be no surprise that by utilizing our knowledge of scripts behavior can be predicted as well. Knowledge of scripts might be helpful in consumer science because understanding scripts might allow one to predict consumer behavior (Erasmus, Bishoff, & Rousseau, 2002). It is no surprise, additionally, that marketers
create different advertisements when directed towards men or women, as a result of the differing gender norms and assumptions about the differences between men and women (Fischer & Arnold, 1994). There have been a number of studies done that point to the conclusion that men and women differ in a number of areas including aggression, certain cognitive skills, the way they shop, and much more (Fischer & Arnold, 1994).

Because gender stereotypes and societal norms indicate that men are more likely to have a heart attack, as indicated by Emslie, et al., (2001), it makes sense that advertisers would target men in these advertisements. Additionally, as women are more commonly seen as those likely to suffer from mental health issues, and as men are likely to feel shamed and therefore unable to seek help when afflicted, it also makes sense that these advertisements would target women more. According to Courtenay (2000), men suffering from mental illnesses, such as depression, are less likely to seek treatment than their female counterparts. Initially it was presumed that men simply were not afflicted with depression because, despite higher suicide rates amongst men as a whole, they rarely self-reported as suffering from depression. In addition, doctors were less likely to diagnose depression in men than in women. Courtenay (2000) ultimately concludes that the fact that society links depression and femininity is likely the main reason that men feel compelled to hide their depression. He even states that denying depression is a means to prove masculinity amongst men (Courtenay, 2000).

These findings regarding the understanding of masculinity and femininity as well as knowledge of scripts and schemas point to reasons that drug advertisements might be gendered. If advertisers feel capable of predicting who might be inclined to use a certain
product (based off of diagnosis and treatment rates) then it makes sense that they would be likely to target their advertisements towards those individuals. However, since diagnosis and treatment rates are impacted by societal norms, it is possible that they are marketing to an already oversaturated consumer group while neglecting to target other groups, who might benefit from the product but who aren’t seen as being primary potential customers.

Overall, it would appear that there are societal norms surrounding particular illnesses. To establish whether or not this is the case, perpetuation of these norms should be explored further. A good way to get a handle on societal perceptions of such illnesses is by looking at advertisements for the prescription drugs that treat them. A content analysis of DTC prescription drug advertisements will serve to show the way that these illnesses are presented to the public. By assessing gender representation in magazine DTC drug advertisements it will be possible to understand whom the advertisement is trying to target. A 2016 study found that 70% of adults read at least one print magazine per month, with 51% stating that they read at least two (Dool, 2016), making magazines a legitimate target for advertising to adults. Though this may be a case of the chicken or the egg, and advertising agencies may market to a specific sex because they know that’s who is most likely to purchase their products, this study seeks to show that a particular relationship exists before there can be further research done to assess its impacts.

**Actual Health Disparities by Sex**

For the purposes of this study, it is important to look at actual sex-based disparities in the advertising of products to treat both heart disease and mental illness.
Though it is anticipated that there will be actual sex-related disparities between heart disease and mental illness, this study hopes to observe the pervasive gender norms surrounding each of these types of illnesses and discover biases in prescription drug advertisements for the treatment of these illnesses in magazines.

To start off, though there is a higher mortality rate for men, heart disease is still the leading cause of death for both men and women. According to the CDC’s *National Vital Statistics Reports*, the male to female ratio for heart disease related cause of death was 1.6 to 1 (Xu, Murphy, Kochanek, & Bastian, 2016).

Before reporting on overall mental health statistics, it is vital to point out that of the top fifteen leading causes of death intentional self-harm (suicide) clocks in at number ten. Here is where we see the largest male to female disparity of all the top ten causes for death. The male to female ratio for suicide is 3.7 men for every 1 woman. The second largest disparity is 2.3 to 1 for Parkinson’s disease (Xu, et. al., 2016).

According to the World Health Organization (WHO), depression is consistently reported to be about twice as common in women than it is in men throughout the world. The WHO points out that despite its prevalence, less than half of those afflicted will be diagnosed by their primary care doctors (WHO, 2013 p. 2). Similar to the way that women are less frequently treated for their physical symptoms, men are less likely to be diagnosed with depression even when describing identical symptoms.

Moving on from depression, the WHO states that sex differences for lifetime prevalence of mental illnesses such as bipolar disorder and schizophrenia are not significant. Men do have a higher rate of alcohol addiction than women, but this could be
in part a result of the fact that women are less likely to admit to a doctor that they are so afflicted. Women, on the other hand, are more likely to suffer from Post-Traumatic Stress Disorder (PTSD).

What these statistics show is that even though women are reported to be twice as likely to be depressed, men are 3.7 times more likely to die by suicide. This speaks to a high rate of depression in men, and is potentially a result of the fact that men are less likely to be diagnosed and are therefore less likely to receive help. That being said, the WHO reports that in a nine country study, though men “successfully” commit suicide more frequently, resulting in higher suicide rates, women did have higher rates for suicide attempts overall (WHO, 2013).

The WHO reports gender bias in research and treatment, as well as a few other areas. They state that gender biases have “skewed the research agenda” (WHO, 2013, p. 8). While much research has linked biological and reproductive factors to the mental health of women, little research has been done to do the same for men. However, it was found that following childbirth both men and women could experience depression.

Finally, there is a notable difference in regards to gender bias in treatment. Women are more likely to be prescribed psychotropic drugs and are 48% more likely to actually use psychotropic drugs than men (WHO, 2013). Women are also more likely to seek out help from a physician, while men are more likely to go to a specialist or seek inpatient care. As previously stated, men are, however, more likely to share alcohol related problems with a provider (WHO, 2013).
Schema Theory

The utilization of schemas, regardless of whether it is done consciously or subconsciously, likely plays a role in both the creation of the advertisements we see and in the diagnoses handed down by medical professionals. “A schema is a cognitive structure, a network of associations that organize and guides an individual’s perception” (Bem, 1981, p. 355). Schemas represent knowledge in the sense that they provide a number of associations and ideas with various already known concepts. Schemas also help individuals to process information more quickly, often through stereotypes and heuristics. Schemas are the reason that only a few details about a person, an object or a situation, allow you to conjure a fairly complete, if not always accurate, preliminary picture in your mind. Please consider the following scenario as an example:

Picture yourself in a situation where you were charged with the task of selling a new Barbie product. It’s Barbie’s Dream Hospital, fresh on the market from Mattel. Think to yourself: what types of products might be included in this new Dream Hospital toy set? Some pairs of scrubs, an ambulance, a lab coat, and an examination table may come to mind. Now, if you were told you had to put together a television commercial or print advertisement for such a product, what sorts of concepts or visuals might you devise? Odds are you would start with a pink or purple set. The girls playing with the Barbie dolls would likely be outfitted in bright colors and they would be playing happily, working together to patch up a patient.

Now, while your product and commercial ideas might have differed slightly from what has been laid out, it’s likely that they were essentially similar. It can be assumed
with a fair amount of confidence that, when asked what would come in a Barbie Dream Hospital set, no one conjured up images of dragons or a spaceship. Similarly when asked to put together a commercial, it is doubtful that anyone thought that the background should have been red or that boys should be featured a commercial for a Barbie branded product. The reason for this is that we have a number of associations with various objects and ideas in our everyday lives.

As was stated previously, schemas provide a number of associations and ideas with various already known concepts, making thought and decision-making processes simpler and less mentally taxing. A few examples of the areas in which schemas might be helpful are in providing background information for concepts (a hospital), activities (imaginative play), or social phenomena (gender stereotypes). Such constructs make thinking easier so that they require less cognitive effort (DiMaggio, 1997).

Gender schema theory is the idea that sex typing occurs as a result of, “gender-based schematic processing” (Bem, 1981 p. 358), which happens as a result of our general willingness to take in new information based on sex associations. The theory also posits that this is related to the fact that self-concept is linked to gender schemas. From a young age, children learn which gendered behaviors and ideas are associated with which sex, and as a result which are appropriate for themselves. These ideas about sex and gender include strength for boys and weakness for girls (Bem, 1981).

When preparing to advertise a product you must consider who is likely purchase it. This is the reason that most people would have thought to cast girls in the Barbie commercial. Since Barbie is traditionally thought of as a girl’s toy that is to whom you
would instinctively want to market. Gender schemas also have led individuals to believe that women are more likely to be weak and in need of help, so it is therefore logical that this is whom most advertisements for medications would target. In addition, it makes sense that if diseases and illnesses are gendered, mental health issues are thought of as more feminine issues and heart problems are skewed as masculine ones, it similarly makes sense that medical advertisements for the treatment of such afflictions would be targeted specifically to their respective sexes.

Ultimately schemas, which are informed by and lead to stereotypes and generalizations, are likely to influence both the medical field and the field of advertising. Though it can be considered a case of the chicken and the egg, gender norms, advertising, and medical diagnoses all feed into, and are fed by, one another. To start with an advertisement, one might think to themselves that if they need to advertise a drug for social anxiety they are best suited to advertise to the group that needs it most. Societal gender norms would dictate that women, being perceived as more emotional and needy, are most likely to need this medication and choose to primarily market to them. Women, seeing this medication marketed using models they identify with in media they frequent, might feel that they are in need of this drug and talk to their doctor about it. When a female patient comes in complaining about tightness in the chest and shortness of breath, doctors, also potentially basing their information on gender norms and the fact that many other women have come in asking for a new and popular drug for anxiety, might be inclined to diagnose the woman with anxiety, prescribe a new anxiety medication, and
then send her home. However, the aforementioned symptoms, as laid out by the
American Heart Association, are symptoms of a heart attack in women (2017).

Alternately, a man suffering from anxiety might have his symptoms mistaken as
being solely physical by doctors who are used to ascribing mental health issues to
women. Because he reads traditionally male-targeted magazines, he does not see the
social anxiety drug advertised; even if he did, the female character in the ad might make
him feel that the drug is not for him. He finds it hard to discuss these symptoms with
peers as it makes him feel as though he is weak and vulnerable, a state that is frowned
upon by our societies cultural norms and he goes undiagnosed. The doctor does not alter
his or her mentality about who might be afflicted with anxiety because the man goes
undiagnosed with such an ailment and, therefore, statistics regarding the demographics of
those who suffer with mental illnesses do not change. Even someone running a well-
researched campaign based off of statistics from the CDC still might choose to only
advertise to women. Ultimately the cycle continues and no societal change is made.

Research Questions

There are drugs being advertised to consumers that are stereotyped based on the
societal perception of the illness being seen as something that primarily afflicts men or
women. For this study I anticipate that those particular gender/life roles will be portrayed
as needing certain DTC prescription drugs more. For this content analysis I have two
primary areas of investigation. The first area examines how the visibility of men and
women in direct-to-consumer (DTC) advertisements match the real life breakdown
among men and women afflicted with illnesses. Based on this I propose the following research questions:

RQ1: Will women or men be depicted more frequently in DTC advertisements that treat mental illness?

RQ2: Will women or men be depicted more frequently in DTC advertisements that treat heart illnesses?

RQ3: Will women or men be presented more often in DTC advertisements overall?

In order to get an idea of whom pharmaceutical companies view as their target market for specific ailments and medications, this study will also take a look at the presence of such advertisements in print media specifically aimed at either men or women. By looking at top women’s, men’s and gender-neutral/general interest magazines, this study will assess the extent to which prescription drugs to treat heart health issues, prescription drugs to treat mental health disorders, and prescription drugs to treat other illnesses are advertised. This will be useful in understanding the extent to which such illnesses are viewed as sex specific by drug companies. This leads to the next set of research questions:

RQ4a: In magazines that target men, will DTC drug advertisements for the treatment of heart health or mental illness be most prevalent?

RQ4b: In magazines that target women, will DTC drug advertisements for the treatment of heart health or mental illness be most prevalent?
RQ5: Will women or men’s magazines have more DTC drug advertisements overall?

Ultimately, this study will compare the representation of men and women in each type of advertisement with the actual prevalence of the illnesses among these segments of the real world population. This study will examine the potential disparity between real world diagnoses of particular types of illnesses and the sex of the “characters” who are shown to be in need in advertisements. Based on this the following research questions are proposed:

RQ6: Will the presentation of men and women as patients in DTC advertisements for the treatment of mental illnesses reflect the proportion of real-world diagnoses for men and women patients?

RQ7: Will the presentation of men and women as patients in DTC advertisements for heart-related illnesses reflect the proportion of real-world diagnoses for men and women patients?

Finally, in an effort to get a complete picture of the extent to which men and women are targeted not just by DTC prescription drug advertisements but all types of drug advertisements, the following research questions are proposed:

RQ8: Magazines primarily targeting which audience (men, women, or gender neutral) will have the most over-the-counter (OTC) drug advertisements overall?

RQ9: Magazines primarily targeting which audience (men, women, or gender neutral) will have the most advertisements of any nature, overall?
Chapter 2
METHOD

Sample

For the purposes of this study, it was necessary to identify magazines that specifically target women and those that target men. In addition, gender-neutral/general interest magazines needed to be located. These are magazines that do not specifically target men or women, but are intended to be read and enjoyed by both. This study purposefully passed over magazines such as *AARP The Magazine, Costco Connection, American Rifleman*, and others because these are magazines that come with subscriptions to other organizations and therefore are not the general interest magazines this study is interested in. Additionally, a magazine like *Boys’ Life* for Boy Scouts or *Seventeen* magazine for teenage girls were eliminated as well, due to the desire to use magazines for whom their target audience are adults. Finally, in order for a magazine to be a part of the sample it has to be published, at minimum, on a monthly basis. Magazines published quarterly, were not used as a part of the sample. The few magazines with 10 issues per year were still used as a part of the study, but with the additional magazines taken from immediately before or after the August 2015-July 2017 time frame. Additionally, issues of magazines published more than once a month were randomly selected using a random number generator.
The men’s and women’s magazines were selected through Top Ten lists, created by the website Cision. Cision is a public relations software company that, amongst other things, provides information to companies to help them reach their target audience as well as finding potential new audiences. As a result, they have information about influencers on various social media sites as well as circulation rates.

According to Cision, the top five women’s interest magazines of 2011 (based on “audited circulation figures”) are Better Homes and Gardens, Good Housekeeping, Woman’s Day, Family Circle, and Cosmopolitan (Cision, 2011). Cision has a list of the top 10 men’s interest magazines of 2016, the top five of which are Men’s Health, Maxim, GQ, Esquire and Men’s Journal (Cision, 2016). Unfortunately, while Cision had a 2016 list for men’s interest magazines, their most recent list of women’s magazines came out in 2011.

General interest magazines were slightly harder to discern, as there was no specific list for them. However, according to the Alliance for Audited Media, an organization that puts together media information for over 4,000 agencies, advertisers and publishers, it would appear that the top general interest magazines based on their data are People, National Geographic, Time, Smithsonian and Entertainment Weekly (Alliance for Audited Media, 2017).

For magazines that are published on a monthly basis, every issue published over a two-year period was used. For the magazines People and Entertainment Weekly, which are weekly publications, one issue for each month of the two-year period was randomly
selected. Ultimately, 360 total magazines were coded (24 per title). The sample was taken using magazines published from August 2015 to July 2017.

Overall, across the 360 magazines coded, 14,740 advertisements were examined, with 1,262 coded as DTC advertisements and 311 coded as OTC advertisements.

**Coders and Coder Training**

The author was the primary coder for this study, and the secondary coder was a fellow graduate student at an East Coast University. Training occurred through a three-step process. First, the primary coder worked through and explained each step of the coding manual with the secondary coder. See Appendix A for the Coding Manual. Next, the author coded a magazine from the sample with the second coder so that they saw how the process is done. And finally, the second coder coded a different magazine to be sure they understood the process. The training also consisted of a discussion of the recording instrument. See Appendix B for the Coding Instrument.

It was important to ensure that the second coder understood the difference between an advertisement for a direct-to-consumer prescription drug and an over-the-counter medicine. In the coding manual, the second coder was provided with a list of popular over-the-counter drugs, such as Advil, Tylenol, Robitussin, Aleve, Zyrtec, and others to make the process easier. Some such distinctions are also included on the coding manual, which the second coder had a copy of. Additionally, the second coder was informed of some of the rules that all direct-to-consumer advertisements follow and therefore the coder should look for. This included the requirement that all DTC advertisements must direct readers to a doctor to seek advice, must include a “brief
summary” of one or more pages that lists all potential risks, must include the verbiage, “You are encouraged to report negative side effects of prescription drugs to the FDA. Visit MedWatch, or call 1-800-FDA-1088,” and both the brand name and the generic name of the drug (USFDA, 2015). Particular care was taken in the training process to ensure that the second coder understood this difference as well as the need for this study to only code full-page advertisements, nothing smaller. The training process took about an hour and a half.

Once training was complete the author coded 100% of the study sample. The second coder coded 20% of the entire sample, 72 magazines in total.

**Intercoder Reliability**

In order to be sure that the coding process was accurate, a second coder was trained by the primary researcher. This second coder examined 20% of the overall sample of magazines (72 magazines overall) and ultimately coded 240 DTC advertisements (19.02% of total number of DTC advertisements) that were present in the assigned magazines. The researcher was ideally looking for a reliability score of at least .75 across all categories.

Amongst nominal level variables, such as the sex of the characters, the illness category of the drug advertisements, and the specific drug advertised; were tested for reliability using Cohen’s kappa (Cohen, 1960; Hayes & Krippendorff, 2007), Cohen’s kappa is used to judge percent agreement when using nominal data with two observers (Hayes & Krippendorff, 2007). Overall intercoder reliability was quite good for all
nominal variables: the sex of the characters in the advertisement ($\kappa = .88$), the illness the prescription is intended for ($\kappa = .81$), and the name of the prescription drug ($\kappa = .96$).

For the remaining variables Cronbach’s alpha was utilized due to its ability to measure consistency among coders for both interval and ratio level variables (Hayes & Krippendorff, 2007). Cronbach’s alpha was therefore utilized to assess intercoder reliability for counts of overall number of advertisements within a magazine issue as well as the number of DTC and OTC advertisements. Reliability amongst these three variables was incredibly high for all three of these variables: for the overall number of advertisements ($\alpha_c = .99$), the number of DTC advertisements ($\alpha_c = .99$), and the number of OTC advertisements ($\alpha_c = .98$).

**Coding Instrument**

There was one primary unit of analysis in the recording instruments: the advertisement. Each full-page advertisement was coded to determine if it was for a direct-to-consumer prescription drug, for an over-the-counter medicine, or for another type of product. Only full-page advertisements were looked at because pharmaceutical advertisements are required by the FDA to be at least one page, and many magazines have small advertisements across many pages. Therefore, only advertisements large enough to match the size of DTC advertisements were counted toward the advertisement total. Each DTC advertisement was then subjected to further coding in order to determine what medical condition the medicine advertised was to be used to treat, and the sex of the primary characters featured in the advertisement.
There were two coding instruments for this study. Instrument A was used to code each of the magazines as a whole, asking both general and specific questions. This first instrument asks the title, publication date, and total number of pages in the magazine. Also, based on the target audience of the magazine, the coder is asked what the “gender of the magazine” appears to be. Finally this first coding instrument asks the number of full-page advertisements overall as well as the number of those advertisements that are for DTC and OTC medications.

Instrument B was used only when a direct-to-consumer advertisement was identified. Once coded as a DTC advertisement, the ad was coded for the type of condition featured and for the sex of the primary character in the advertisement. See Appendix B for both Coding Instruments.

Variables

Every full-page advertisement was coded based upon the type of product it was for. The total number of DTC and OTC medication advertisements was calculated while full-page advertisements for other products were not subjected to further coding.

Each full-page DTC advertisement was then subjected to further coding. First, the advertisement was be coded for the general category of medical condition the drug advertised is intended to treat: mental illness, heart health, or some other category of illness. Second, each full page DTC advertisement was coded based upon the sex of the primary character(s) seen: Adult Man/Men, Adult Woman/Women, Mixed Sex, or Other.

There were a number of challenging decisions that needed to be made about how to code certain advertisements as this project progressed. From the very beginning of this
study it became clear that it would be a challenge to determine where to draw the line between what counted as an OTC medication and what did not. The first line was drawn between active medications, vitamins, and probiotics. A decision was made early on that vitamins would not be counted as OTC medications because, while they may promote a healthy lifestyle, they do not treat a specific ailment. In addition, despite the fact that advertisements boast that Florastor will boost your immune system and that Culturelle will help your digestive issues, these were not considered to be OTC medications for the purpose of this study. It seemed that probiotics were closer to vitamins than they were to actual OTC medications, which is why the decision was made not to count advertisements for those products as well.

Another line had to be drawn when considering the various creams and lotions on the market and advertised in these publications. Though some creams like Eucerin and Aquaphor were endorsed by doctors, they were still not counted as over-the-counter medications because they did not actually serve one specific medical purpose and might be used by people for a myriad of other reasons. OTC medications like Tylenol, Prilosec, and Imodium all serve specific purposes and are actively medical in nature. A person would not take these drugs without a need for the specific purpose they serve. However, Eucerin, Aquaphor or and other products like them, though occasionally advertised as being endorsed by doctors, do not serve a specific medical purpose, and might be used by consumers for alternative reasons. Additionally, it seemed to be a slippery slope in the sense that when a specific medical use could not be found, it would be incredibly challenging to determine which other beauty products should be considered OTC within
the scope of this study if the aforementioned ones were. Wrinkle reducing creams, skin softening creams and a variety of other products serve a very similar purpose to those advertised as being promoted by doctors; however, that does not mean that Nivea or Chap Stick should be considered OTC medications.

There were a few issues that needed to be addressed in regards to the determination of whether the main character of an advertisement was male, female, neither, or both. For certain advertisements only parts of the body were visible. It was determined that though an individual might be present, if only the lower half is visible, they must be shown from at least the knee down. In situations where only a small portion of the body was shown, if sex was not abundantly clear in the image, it was to be simply marked as neither.

In advertisements where age of the characters was unclear, such as one advertisement where a young man and a young woman are kissing, but it is impossible to tell if they are supposed to be over or under eighteen years old, they were simply marked as neither. Being that individuals under 18 years of age were not coded at all (a woman and male child would still be coded as a woman), the presence of underage individuals would not be coded as having a male or female character present.
Chapter 3

RESULTS

Character Representation in Direct-to-Consumer Drug Advertisements

This study sought to determine the ways that women and men would be depicted in direct-to-consumer pharmaceutical advertisements, with a particular focus on illness categories for mental illness and heart health. As such, my first research question focused on the number of women and men who are present in advertisements for prescription drugs to treat mental illnesses. Overall, 87 advertisements (6.89% of the sample) targeting mental illness were coded. See Table 3.1. The vast majority of these 87 advertisements treated one of two specific illnesses: insomnia or depression. Of these 87 advertisements, 35 were for Belsomra, a drug which is prescribed to individuals suffering with insomnia. Another 50 of the 87 advertisements were for a variety of DTC drugs prescribed for the treatment of depression; of these 50, only two did not exclusively feature women – specifically, advertisements for Latuda and Trintellix featured both a man and a woman. Though it was clear in each of these ads that the patient was intended to be the woman, as a male was also heavily featured, the coding instrument required that the advertisement be coded as “both.” The remaining two advertisements of the 87 that treat mental health related issues were for Chantix, a smoking cessation drug, which featured ashtrays and not people. From this data we were able to determine that 83 of the
Table 3.1 Proportion of DTC Advertisements, by Illness and the Sex of the Characters, Across All Advertisements

<table>
<thead>
<tr>
<th>Ad type</th>
<th>Total</th>
<th>Men only</th>
<th>Women only</th>
<th>Men and Women</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Health</td>
<td>50 ads</td>
<td>27 ads</td>
<td>9 ads</td>
<td>1 ad</td>
<td>13 ads</td>
</tr>
<tr>
<td></td>
<td>(3.96%)</td>
<td>(2.14%)</td>
<td>(0.71%)</td>
<td>(0.08%)</td>
<td>(1.03%)</td>
</tr>
<tr>
<td>Mental Health - overall</td>
<td>87 ads</td>
<td>0 ads</td>
<td>83 ads</td>
<td>2 ads</td>
<td>2 ads</td>
</tr>
<tr>
<td></td>
<td>(6.89%)</td>
<td>(0%)</td>
<td>(6.58%)</td>
<td>(0.16%)</td>
<td>(0.16%)</td>
</tr>
<tr>
<td>Mental Health - Insomnia</td>
<td>35 ads</td>
<td>0 ads</td>
<td>35 ads</td>
<td>0 ads</td>
<td>0 ads</td>
</tr>
<tr>
<td></td>
<td>(2.77%)</td>
<td>(0%)</td>
<td>(2.77%)</td>
<td>(0%)</td>
<td>(0%)</td>
</tr>
<tr>
<td>Mental Health - Depression</td>
<td>50 ads</td>
<td>0 ads</td>
<td>48 ads</td>
<td>2 ads</td>
<td>0 ads</td>
</tr>
<tr>
<td></td>
<td>(3.96%)</td>
<td>(0%)</td>
<td>(3.80%)</td>
<td>(0.16%)</td>
<td>(0%)</td>
</tr>
<tr>
<td>Other illnesses</td>
<td>1,125 ads</td>
<td>192 ads</td>
<td>629 ads</td>
<td>148 ads</td>
<td>156 ads</td>
</tr>
<tr>
<td></td>
<td>(89.14%)</td>
<td>(17.07%)</td>
<td>(55.91%)</td>
<td>(13.16%)</td>
<td>(13.87%)</td>
</tr>
<tr>
<td>Overall</td>
<td>1,262 ads</td>
<td>219 ads</td>
<td>721 ads</td>
<td>151 ads</td>
<td>171 ads</td>
</tr>
<tr>
<td></td>
<td>(100%)</td>
<td>(17.35%)</td>
<td>(57.13%)</td>
<td>(11.97%)</td>
<td>(13.55%)</td>
</tr>
</tbody>
</table>

87 total advertisements for the treatment of mental health related issues (95.40%) all featured solely women. See Table 3.2. There is a clearly visible depiction of women as the primary targets for mental health based DTC advertisements.

For research question two, heart health advertisements were also specifically looked at to determine the sex of the models most frequently present. Of the 1,262 coded advertisements, only 50 (3.96%) were heart health oriented. Of the 50 coded DTC prescription drugs advertisements to treat heart health related issues, advertisements featuring only women were seen 9 times (18.00% of heart health advertisements) while 27 advertisements featured only men (54.00% of heart health advertisements). See Table 3.2. Advertisements for Entresto, a medication prescribed to treat heart failure, tended to
Table 3.2 Proportion of DTC Advertisements, by Sex of the Characters, Across Each Illness Category

<table>
<thead>
<tr>
<th>Ad type</th>
<th>Total</th>
<th>Men only</th>
<th>Women only</th>
<th>Men and Women</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Men only</td>
<td>Women only</td>
<td>Men and Women</td>
<td>Other</td>
</tr>
<tr>
<td>Heart Health</td>
<td>50 ads (3.96%)</td>
<td>27 ads (54.00%)</td>
<td>9 ads (18.00%)</td>
<td>1 ad (2.00%)</td>
<td>13 ads (26.00%)</td>
</tr>
<tr>
<td>Mental Health - overall</td>
<td>87 ads (6.89%)</td>
<td>0 ads (0%)</td>
<td>83 ads (95.40%)</td>
<td>2 ads (2.30%)</td>
<td>2 ads (2.30%)</td>
</tr>
<tr>
<td>Mental Health - Insomnia</td>
<td>35 ads (2.77%)</td>
<td>0 ads (0%)</td>
<td>35 ads (100%)</td>
<td>0 ads (0%)</td>
<td>0 ads (0%)</td>
</tr>
<tr>
<td>Mental Health - Depression</td>
<td>50 ads (3.96%)</td>
<td>0 ads (0%)</td>
<td>48 ads (96.00%)</td>
<td>2 ads (4.0%)</td>
<td>0 ads (0%)</td>
</tr>
<tr>
<td>Other illnesses</td>
<td>1,125 ads (89.14%)</td>
<td>192 ads (17.07%)</td>
<td>629 ads (55.91%)</td>
<td>148 ads (13.16%)</td>
<td>156 ads (13.87%)</td>
</tr>
<tr>
<td>Total</td>
<td>1,262 ads (100%)</td>
<td>219 ads (19.47%)</td>
<td>721 ads (62.42%)</td>
<td>151 ads (13.42%)</td>
<td>171 ads (15.20%)</td>
</tr>
</tbody>
</table>

split sex across advertisements, with 9 advertisements featuring solely women, 15 featuring solely men, and one featuring both a man and a woman. The advertisements for other heart health drugs also were heavily populated by male actors: Praluent, for the treatment of high cholesterol in adults, exclusively featured men within their 7 advertisements and Brilinta, a prescription drug to help prevent heart attacks and strokes, exclusively featured men across their 4 advertisements. The odd advertisement out was for Repatha, another DTC prescription drug for the treatment of high cholesterol frequently featured on the last page of *Family Circle*; featured no image but simply text detailing the uses and side effects of the drug. Of the 13 Repatha advertisements in the sample, none of them featured a man or a woman. The only remaining drug
advertisement in the sample for heart health was for Vascepa, a drug prescribed for lowering high triglycerides, which featured only a single man.

Research question three was intended to establish the sex of characters most frequently present in DTC advertisements overall. All in all, women were featured more than men in the DTC advertisements in the sample. While exclusively women were featured in a total of 721 (57.13%) advertisements, advertisements with exclusively men were featured in 219 (17.35%) advertisements, which are over 500 fewer occurrences. Advertisements featuring neither men nor women (this may have included no people at all, indeterminate body parts, animals, or individuals under the age of 18) were seen a sum total of 171 times (13.55%) in the sample. Lastly, both men and women together were seen the least frequently, 151 times (11.97%). See Table 3.1.

**Direct-to-Consumer Advertisements in Targeted Publications**

Research question 4a inquired if advertisements for heart health or mental illness DTC drugs would be most prevalent in those magazines that primarily target a male audience. Across men’s magazines, there was only one advertisement for either a heart health or a mental illness DTC prescription drug. An advertisement for Vascepa, for the treatment of high triglycerides, was published in the April 2016 issue of *Men’s Health*. This was surprising, as it was anticipated that there would be more than one heart health advertisements published in men’s magazines because heart issues are so commonly discussed as illnesses men commonly need treatment for. While there was one heart health advertisement across the 120 men’s magazine issues in the sample, there were no
Table 3.3 DTC Advertisements across Magazines by Their Targeted Audiences

<table>
<thead>
<tr>
<th>Ad Type</th>
<th>Overall</th>
<th>Men’s Magazines</th>
<th>Women’s Magazines</th>
<th>General Interest Magazines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Health</td>
<td>50 ads</td>
<td>1 ad</td>
<td>39 ads</td>
<td>10 ads</td>
</tr>
<tr>
<td></td>
<td>(3.96%)</td>
<td>(2.00%)</td>
<td>(78.00%)</td>
<td>(20.00%)</td>
</tr>
<tr>
<td>Mental Health - overall</td>
<td>87 ads</td>
<td>0 ads</td>
<td>67 ads</td>
<td>20 ads</td>
</tr>
<tr>
<td></td>
<td>(6.89%)</td>
<td>(0%)</td>
<td>(77.01%)</td>
<td>(22.99%)</td>
</tr>
<tr>
<td>Mental Health - Insomnia</td>
<td>35 ads</td>
<td>0 ads</td>
<td>34 ads</td>
<td>1 ad</td>
</tr>
<tr>
<td></td>
<td>(2.77%)</td>
<td>(0%)</td>
<td>(97.14%)</td>
<td>(2.86%)</td>
</tr>
<tr>
<td>Mental Health - Depression</td>
<td>50 ads</td>
<td>0 ads</td>
<td>33 ads</td>
<td>17 ads</td>
</tr>
<tr>
<td></td>
<td>(3.96%)</td>
<td>(0%)</td>
<td>(66.00%)</td>
<td>(34.00%)</td>
</tr>
<tr>
<td>Other illnesses</td>
<td>1125 ads</td>
<td>74 ads</td>
<td>852 ads</td>
<td>199 ads</td>
</tr>
<tr>
<td></td>
<td>(89.14%)</td>
<td>(6.58%)</td>
<td>(75.73%)</td>
<td>(17.69%)</td>
</tr>
<tr>
<td>Overall</td>
<td>1,262 ads</td>
<td>75 ads</td>
<td>958 ads</td>
<td>229 ads</td>
</tr>
<tr>
<td></td>
<td>(100%)</td>
<td>(5.94%)</td>
<td>(75.91%)</td>
<td>(18.15%)</td>
</tr>
</tbody>
</table>

advertisements for any mental health medications featured whatsoever. Therefore, while heart health advertisements were indeed seen more than advertisements for mental health prescription drugs, the margin was simply 1 advertisement to 0, making this a barely notable result. See Table 3.3.

Research question 4b asked about the same issue as research question 4a but instead focused on those magazines that primarily target a female audience. There were 958 DTC advertisements found across all of the women’s magazines in the sample, but only 11.06% (106 advertisements) were for DTC prescription drugs to treat heart health or mental health. Of those 106, 67 (6.99% of all the advertisements in women’s magazines) were mental health advertisements and 39 (4.07% of all the advertisements in women’s magazines) were heart health advertisements. See Table 3.3. There were
certainly more mental health DTC advertisements overall found in the women’s magazines than DTC advertisements for heart health.

Women are overmedicated as a whole, with older women prescribed more medication than older men, and with overall higher rate of prescriptions for psychotropic drugs (Ponte, 1995; Thorne, 1992). Research question five sought to find out, if going along with this trend, women would be advertised to more as a whole in DTC advertising. Being that typically, when there are more women in a household, there will be more doctor visits for all members, it is clear that women are driving forces for family members to go to the doctor (Cockerham, 2015). As a result, it would make sense if pharmaceutical companies advertised to women, both for drugs for them and for drugs for the men in their lives.

This was overwhelmingly found to be the case. In terms of which magazine type had the most DTC advertisements overall, magazines targeting women resoundingly had the most. There were 958 (75.91%) pharmaceutical advertisements across the women’s magazines. At a distant second, the general interest magazines had 229 (18.15%) advertisements, while the men’s magazines had only 75 (5.94%). See Table 3.3. Of the advertisements in the women’s magazines, 120 (12.53% of the 958 total advertisements in women’s magazines, 9.51% of advertisements total) exclusively featured men. This means that women’s magazines had more advertisements that featured male characters (presumably implying that the target audience for the drug is male), than the sum total of all of the DTC prescription drug advertisements across the men’s magazines.
Comparisons to the Real-World Prevalence of Illnesses

All of the aforementioned data is interesting in its own right, but it is important that we know how those numbers compare to the real world prevalence of the illnesses they are advertised for treating. Research question 6 was geared toward comparing the sex breakdown in mental health advertisements to real life rates of those illnesses. Once the content of the advertisements was complete there were two distinct categories of DTC advertisements under the umbrella term of treating mental illness that treated very different illnesses: those that treat insomnia and those that treat depression. Because of these two disparate illnesses it became important to determine if there were any significant differences in how each of these illnesses are portrayed in its advertising as compared to real word statistics of who suffers from these illnesses.

When examining the prevalence of insomnia among the population research has found that 7.1% of women have reported difficulties while falling asleep while 5.1% of men have reported the same difficulties (Lijenberg, et. al, 1988; Mallampalli & Carter, 2014). With women reporting experiencing insomnia and difficulty falling asleep 1.4 times more often than men then there is an expectation that advertisements targeting women for DTC products to treat insomnia would follow that same trend. The sample showed 35 total advertisements for insomnia related DTC prescription drugs, which depicted women significantly more frequently and men significantly less frequently ($\chi^2 = 24.99, df = 1, p < .001$) than would have been expected.

In the same vein, the World Health Organization (WHO) reports that a diagnosis of depression for women is twice as common as depression in men (WHO, 2013). For this
reason it is expected that there would be twice as many DTC prescription drug advertisements for depression featuring women as there would be featuring men. In this study’s sample, with 48 advertisements for drugs treating depression featuring solely women and 0 advertisements featuring solely men, women were depicted significantly more and men significant less ($\chi^2 = 24.00, df = 1, p < .001$) than was expected.

According to the Centers for Disease Control (CDC), the male to female ratio is 1.6/1 for heart disease related cause of death (Xu, et. al., 2016). Research question seven focused on comparing real world heart disease rates to sex representation in the coded heart health advertisements. In the 50 heart health prescription drug advertisements in the sample, only men were pictured 27 times while only women were featured 9 times. This result shows that there is not a significant difference between what was observed in the DTC advertisements in the sample and the real-world diagnosis of heart related illnesses ($\chi^2 = 2.75, df = 1, p > .05$).

**Other Advertisements in Targeted Publications**

Advertisements for over-the-counter medications were also counted. Research question 8 was created to assess any differences in over-the-counter advertisement amongst the three categories of magazines. At the end of this study, 311 advertisements for over-the-counter medications were counted. Men’s magazines had only 25 (8.04%) advertisements and the general interest magazines had 47 (15.11%) over-the-counter drug advertisements. The overwhelming majority of OTC advertisements were present in women’s magazines. Women’s magazines had over three times the amount of OTC
advertisements present as the men’s and general interest magazines combined, with 239 (76.85%) OTC advertisements overall.

Finally, research question 9 addressed the number of advertisements of any nature across the three magazine categories. It was found that women’s magazines had the highest amount of total advertisements, with 7,124 (48.33%) found across the 120 magazines coded. Men’s magazines were next, with 4,733 (32.10%) advertisements found, and finally followed by general interest magazines with 2,883 advertisements (19.56%) total.
Chapter 4

DISCUSSION

This study sought to determine the gender disparities in direct-to-consumer pharmaceutical advertisements over a number of different magazines. To do this, magazines were combed for direct-to-consumer pharmaceutical advertisements and all advertisements found were coded according to the sex of the main character(s), if any were present, as well as the type of illness that would be treated by the prescription drug featured in the advertisement. There were many results discussed in the previous section but they did not touch on all that was discovered. There are many additional insights to be made by looking at other aspects of the advertisements analyzed.

One thing that needs to be considered is the difference in the quantity of advertisements within the three types of magazines analyzed in this study: magazines targeted specifically to women, magazines targeted specifically to men, and general interest magazines. Magazines targeting women had 75.91% of the pharmaceutical advertisements as a whole, but only 48.33% (7,124 total) of the overall number of advertisements, these results are telling. Such a disparity between the total number of advertisements in magazines targeting women and the number of DTC pharmaceutical advertising says something about the public perceptions about women’s health, the
perceived need for women to take care of themselves, and the perceived need for them to take care of their families, as compared to men.

However, this interesting finding comes nowhere near that of the differences between the advertisements found in magazines targeting men and general interest magazines. Men’s magazines had the next highest amount of advertisements, 32.11% of the total counted (4,733 actual advertisements), and yet they only had 75 pharmaceutical advertisements overall, making up a mere 5.94% of coded pharmaceutical advertisements. In comparison, general interest magazines had fewer of the overall advertisements (19.56% of all advertisements, 2,883 total) but had 299 (18.15%) of the total coded DTC advertisements. This certainly speaks to the extent that pharmaceutical advertisements are abundantly more present in women’s and general interest magazines, as compared to men’s magazines.

To further this point, it was found that pharmaceutical advertisements made up the lowest proportion of advertisements in men’s magazines as compared to the other two categories of advertisements. Only 1.58% of advertisements in men’s magazines were for DTC pharmaceuticals, while 0.50% were for OTC medications. In general interest magazines, the percent of DTC advertisements jumps to 7.91% with OTC jumping to 1.66%. Finally, in women’s magazines it increases even further to 13.45% for DTC advertisements and 3.35% OTC advertisements. Ultimately, men’s magazines had the highest percentage of non-medical advertisements, with 97.92% of advertisements being of a non-medical nature. General interest magazines had 90.03% of their full-page
advertisements focused on the non-medical products. Finally, women’s magazines had the lowest percentage of non-medical advertisements, coming in at 83.20%.

This again shows the extent to which pharmaceuticals are more outwardly targeted towards women as opposed to men. Women were overwhelmingly more present as the characters in pharmaceutical advertisements, and pharmaceutical advertisements made up a higher proportion of overall advertisements present in women’s magazines. The exact opposite is true for male characters in such advertisements and the amount of DTC advertisements seen in men’s magazines.

While most of the results were not unexpected, the only surprise found was that men were not present in significantly more heart health advertisements than women. Women were overwhelmingly more visible in mental health advertisements, with only two men present in the 86 coded advertisements, and the two that were present shared the page with women. Overall, women were overwhelmingly more present than men were; women appeared in 721 advertisements compared to the 219 appearances of men. That difference of over 500 appearances, on top of the fact that a higher proportion of women’s magazine advertisements are dedicated to prescription medication clearly points to the fact that women are seemingly over-marketed to when it comes to health related matters.

This is viewed to be the result of a couple of important factors to note. First, as mentioned earlier, women in the society in which we live are viewed as being physically and emotionally weaker while men are perceived as stronger. There is a societal perception that going to the doctor and indicating that you are in need of help is a sign of
weakness; it follows that women would be over-marketed to in pharmaceutical advertisements thought to be needed by those who are in need of help and in some way weaker than others. Additionally, the quantity of advertisements clearly featuring men in women’s magazines could lead to the conclusion that women are intended to be taking on the role of caretaker, by looking after not only the children in their care but also the men in their lives. This is further demonstrated by the fact that only 11 of the 75 advertisements in men’s magazines (14.67%) featured only female characters while 120 of the 958 advertisements in women’s magazines (27.19%) featured exclusively male characters.

This means that almost twice as many advertisements in women’s magazines focused on men than advertisements in men’s magazines that focused on women. It seems that when an advertisement features a member of the opposite sex in an advertisement featured in a predominantly male- or female-targeted magazine, the intention is for attention to be called toward that advertisement for an individual that is not the intended reader. Meaning that when an advertisement for Humira (for the treatment of psoriasis) featuring a female character is presented in a men’s magazine, it is the intention of the advertiser to get men reading that magazine to consider Humira as an option for the reader’s sister, girlfriend, mother, or some other woman present in their life. In this study because it was found that women’s magazines had nearly twice as many advertisements featuring the opposite sex as compared to men’s magazines, it is presumed that women are viewed as more likely to pass on such information to men that they know or simply take care of their significant others and family members of the
opposite sex. And as previously mentioned, advertisers may feel supported in this belief when one considers that there are more doctor’s office visits in families where there are more women present (Cockerham, 2015).

Though it is hard to say that men are “underrepresented” in any category of illness other than mental illness (due to the fact that, in this study, mental illness and heart health were the only areas in which advertisement presence was compared to real life prevalence), it is likely that such gender biases will persist in the various types of DTC advertisements across all magazines. If current gender norms and advertising trends persist it is possible that men may be missing out on drug and treatment options that could be utilized in order to seriously improve their lives and overall well-being.

Limitations of the Current Study

There are a number of limitations for any study or experiment, and this content analysis was no different. One of the primary limitations has to do with the fact that nearly all of the magazines used in this study came from libraries. As this study was conducted in a university setting, the Interlibrary Loan system was heavily relied on. This means that clusters of issues came from various locations. As magazines occasionally vary advertisements by region, there is a possibility that the same magazine might have been coded differently depending on which library it came from. However, the difference is likely negligible, and larger scale ad campaigns for direct-to-consumer advertisements would likely not have been impacted by these regional differences.

One major limitation of this study is the target age of the readers for the magazines selected for this study. While most of the men’s magazines skewed towards a
younger demographic, the women’s magazines, with the exception of *Cosmopolitan*, seemingly targeted an older age group. This may account for some of the pharmaceutical advertising disparities found in the magazines. As less DTC advertising was found in *Cosmopolitan*, it might be the case that the differences in the amount and types of medical advertising are influenced by the intended age of the reader as opposed to (or potentially in addition to) the intended sex of the targeted reader.

An additional limitation stemming from the fact that the magazines coded came from libraries, is that it was impossible to know who had the magazines beforehand and how they might have been tampered with. In the magazines coded for this study, there were a number of instances in which pages were ripped out. In all cases where this was noted, a different issue of the magazine was sought out to be recoded. However, there is the possibility that if pages were ripped out close to the binding, these missing pages would not have been noted, rendering advertisement counts possibly inaccurate. For magazines that had more than one issue per month, such as the weekly *People*, when pages were ripped out a new issue was randomly selected from the weeks left over to be used as part of the sample.

The coding of diseases might have found some coding limitations as well. The standard used to determine what was an advertisement for a pharmaceutical designed to help with a mental health issue for this study was whether the illness served was in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5). Insomnia is listed as a disorder in the DSM-5 and therefore drugs to help treat this disorder were coded as being mental health medications, some might not consider a sleep
aid, such as Belsomra, as a mental health medication (APA, 2017). Also, Tobacco Use Disorder falls under the Substance Use Disorders category of the DSM-5 (APA, 2017; SAMHSA, 2014), and therefore the rare appearance of an advertisement for the smoking cessation drug Chantix was coded as a mental health advertisement.

It is also worth noting that men and women may have different reasons for reading magazines. While many women’s magazines seem to focus on stories and advice to assist their reader to live fuller, healthier, more glamorous, and more fulfilled lives, the men’s magazines focused more on fashion trends and relationships. This might also be a reason that pharmaceutical companies seek out women’s magazines for advertising. Women are potentially more receptive to medical messages in their readings while men, reading for fashion, appearance, and relationship advice, would not be as interested in health care. This idea is partially supported by the fact that many of the pharmaceutical advertisements in men’s magazines focused on the approval of their appearance and on their sexual health. Medications for skincare (psoriasis), erectile dysfunction, chin fat, and erectile curvature, overall medications for what might be considered “vanity purposes,” were overwhelmingly present in men’s magazines. Of only 75 total advertisements 51 (68.00%) were for one of the aforementioned appearance/sex oriented drugs. If Harvoni, for the STD Hepatitis C is added to the list, to make it a list of vanity/sex/sexual health oriented drugs, that number jumps to 58 out of 75 (77.33%) of all the advertisements in men’s magazines. The remaining 17 advertisements are for more conventional medical issues, such as arthritis (9), COPD (4), itchy eyes (2), toe fungus (1) and high triglycerides (1).
Finally, a limitation can be found in the overall readership of the magazines as a whole. According to the Alliance for Audited Media, all five women’s magazines have higher circulation than even the first men’s magazine. Additionally, all five general interest magazines have higher readership than four of the five men’s magazines, *Men’s Health* coming in only before *Entertainment Weekly* and *Smithsonian*. This disparity in readership could be another external factor that impacts pharmaceutical companies in their decisions about where to advertise.

**Directions for Further Research**

There are innumerable areas for potential future research as offshoots of this study, all of which the researcher would love to explore should the opportunity present itself. First of all, while the focus of this study was on DTC prescription drug advertisements for the treatment of heart and mental illness, there were numerous other notable biases in other categories of DTC advertisements. Stroke prevention medication advertisements almost exclusively featured male characters. This despite the fact that, according to the American Heart Association, rates of stroke are fairly similar between men and women, with no more than a 1.8% difference in prevalence among four age categories (Mozaffarian et. al., 2015); almost all of the stroke advertisements featured exclusively men, or, oddly enough a fish, which based on this study’s taxonomy would be classified as containing neither men nor women.

While advertisements for DTC prescription drugs to treat stroke and its associated symptoms primarily featured men, weight loss advertisements almost always featured all women. This further implies that different types of medications for specific afflictions are
presumed to be needed by specific groups of people, regardless of the real world need by members of any demographic group. In the future, it would definitely be interesting to look at breakdowns of issues such as arthritis, COPD, diabetes, psoriasis, and Irritable Bowel Syndrome to see if any of these other illnesses have apparent gender biases in who is portrayed as suffering from these ailments in the advertisements for the drugs to treat them and compare those findings to the prevalence of these illnesses among men and women.

Additionally, while it was interesting to see the differences in portrayals of men and women in the prescription drug advertisements to treat two specific health concerns, it would also important to look at any racial and ethnic biases in such advertisements. After looking at 1,262 DTC prescription drug advertisements, it was clear that the overwhelming majority of the advertisements featured White characters. Yet when you look at the prevalence of illnesses such as heart disease statistics show that it impacts Black and White individuals at similar rates. The ratio of heart disease as a cause of death is 1.2:1 for Black to White individuals (Xu, et. al., 2016). Despite the fact that Black Americans are affected more than White Americans, White individuals were almost exclusively depicted in advertisements for the heart health advertisements coded. Additionally, The American Heart Association states that race should not change a person’s risk of having a heart attack. So if we assume that people of all races are, proportionally, equally afflicted, then it would be beneficial to see equal representation across heart health DTC advertisements (American Heart Association, 2009). Further research could examine the advertisements in general interest magazines based on
portrayals of race or comparisons could be done between the DTC advertisements found in general interest magazines and those found in publications intended primarily to a Black audience (such as *Ebony*, *Essence Magazine*, or *Jet*).

Alternately, in a study that looked at rates of major depressive disorder by race, it was found that the highest rates of depression were, in fact, found amongst White Americans. This was followed by Mexican Americans, with Black Americans recorded as having the lowest rates of depression (Riolo, Nguyen, Greden, & King, 2005). Despite the fact that this is the case, the fact that all races are afflicted should be taken into consideration by advertisers. And as almost all of the depression advertisements featured White characters, it is fair to assume that the ratio of race in depression advertisements will not match real life prevalence of depression by race. But future research could establish concretely if this is true.

In addition to looking at different magazines that specifically target different races, it would also be vital to look at more magazines along the same gender divisions that simply target varying ages. As one of the greatest limitations of this study was the fact that the analyzed magazine’s target audiences varied significantly by age, a follow up study could be done assessing differences in women’s magazines such as *Marie Claire* or *Elle*, which target younger women. Alternatively, *Playboy, Inc*, and *Golf Digest* would be good options to explore the number of pharmaceutical advertisements in magazines that primarily target older men.

Being that gender roles and schemas were a main influence on this study, a much-desired future step would involve coding the roles and actions of the characters in DTC
prescription drug advertisements. It was noted that, depending on the sex of the character in the advertisement, there was a noticeable difference in the environment in which they were seen and the activities the character was participating in. In many of the advertisements targeting men, the men were shown in outdoor and active settings, while women were more frequently featured in parenting and relational roles. It would be interesting to compare the roles of men and women, particularly within different versions of advertisements for the same drug. For example, Linzess, a drug for the treatment of Irritable Bowel Syndrome, has a few different iterations with both men and women featured. In one version of the advertisement, a woman is made to look like a mother or housewife, literally balancing, amongst many different laxatives, a soccer ball, bottles of water, and free weights in what appears to be her home. The male version of the advertisement features a man outside looking over a stack of laxatives through a telescope. Future research could demonstrate more concretely how different these male and female characters in DTC advertisements are truly being portrayed.

All in all, there were a number of noted situations in which differences in the content of DTC prescription drug advertisements were seemingly related to the sex of the character featured. This is why, on top of the activities depicted in the advertisements, the relationships amongst characters would be interesting to note. Many times women were depicted in family or friend-oriented roles while men were more commonly shown in primarily solitary pursuits. Women were shown with family members while men were running, fishing, and playing guitar onstage. All of these make for interesting commentaries on the societal norms for how men and women are expected to behave and
the roles that they are intended to fulfill, and how these societal perceptions of acceptable activities for men and women are perpetuating by the imagery put forth in our advertising, and specifically in DTC prescription drug advertising that is, at its core, meant to benefit all members of our society.

Finally, in order to establish the impact that such advertisements have on assumptions about who a drug might be best suited for, another future area of research would be an experiment to establish both which drugs are presumed to be needed by which sex and who subjects see as being viable candidates for certain drugs. One potential study would involve showing pharmaceutical advertisements to subjects and then asking them to describe the characteristics for the typical person they would presume would be prescribed the drug. This would be followed up by determining if demographic factors such as race, sex, and age matched the demographic factors of the characters in the advertisements. Additionally, drug advertisements with the drug names and any identifying information about the illness it treats removed would be shown to individuals. Participants would then be asked to identify what sort of illness that drug might be treating. This would be done for advertisements featuring both male and female main characters and would allow for an assessment of which types of illnesses men and women are typically assumed to be suffering from.

Ultimately, these potential experiments circle back to the premise of Schema Theory as a whole. Schemas inform our expectations of the world. Assumptions about illnesses and who is likely to be afflicted by them may very well be informed by our assumptions about the world in which we live. The combination of exposure to the world,
media messages, and gender norms influence the way we see things. This may impact how we see ourselves and understand our own susceptibility to illnesses, as well as influences the way that doctors see their patients. Those who view depression as a “women’s illness” may risk overlooking the true cause of a man’s problems. And someone who does not see women as being a potential candidate for a heart attack would not think to recommend Entresto to their mother, despite the fact that it might save her life.

Schemas cause us to see the world in specific, yet potentially incorrect ways. By understanding the impact of strongly held assumptions about various illnesses, we may be in a position to better treat and understand individuals.
REFERENCES


Appendix A

CODING MANUAL

Instrument A: The Magazine

A. Title and Date of the Magazine
   • Provide the Magazine Title and Publication Date from the Magazine Cover

B. Gender of the Magazine
   • Provide the Code From Below for the Type of Magazine
     1. Female
        (provide the list of magazines here)
     2. Male
        (provide the list of magazines here)
     3. Gender Neutral
        (provide the list of magazines here)

C. Count the Total Number of Full Page Advertisements Overall in the Magazine.

D. Count the Total Number of Full Page Direct-To-Consumer (DTC) Drug Advertisements Overall in the Magazine.

E. Count the Total Number of Full Page Over-the-Consumer (OTC) Drug Advertisements Overall in the Magazine.
   ▪ Pain medications (e.g. Tylenol, Advil, Aleve)
   ▪ Allergy medications (e.g. Claritin, Zyrtec)
   ▪ Cold and flu medications (e.g. Robitussin, Dimetapp)
   ▪ Any medication that can be purchased without a prescription

F. Count the Total Number of Pages in the Magazine.
**Instrument B: Direct-To-Consumer Advertisements**

A. Type of Direct-To-Consumer (Prescription) Pharmaceutical Advertisement
   (NOTE: Only full-page advertisements are to be coded.)
   • Provide the Code From Below for the Type of Condition the DTC Ad is **Primarily For**

1. Mental Health
   ▪ Depression
   ▪ Addiction
   ▪ ADHD
   ▪ Anxiety
   ▪ Bipolar
   ▪ Other Mental Health Related Illnesses

2. Heart Health
   ▪ Cholesterol
   ▪ Beta Blockers
   ▪ Ace Inhibitors
   ▪ Blood Clots
   ▪ Statins
   ▪ Other Heart Health Related Illnesses

3. Other (if other, provide illness)
   ▪ All Other DTC Advertisements (such as for erectile dysfunction, birth control, asthma, constipation, etc.)

B. Sex of the Primary Characters/Models in the DTC advertisement
   • Provide the Code From Below for the Sex of the Characters/Models Featured in the Advertisement

1. Adult Men/Man
   ▪ Only one primary male character/model
   ▪ Multiple primary male characters/models
   ▪ Prominently featured man/men, with individuals of any sex not seen as primary characters/models

2. Adult Women/Woman
   ▪ Only one primary female character/model
   ▪ Multiple primary female characters/models
   ▪ Prominently featured woman/women, with individuals of any sex not seen as primary characters/models
3. Mixed Sex
   - At least one primary male character/model AND at least one primary female character/model

4. Other
   - If the sex of the prominent character/characters is unclear or unknown
   - No people (real or animated) are present in the advertisement
Appendix B
CODING INSTRUMENTS

Instrument A: The Magazine

A. Title and Publication Date

B. Gender of the Magazine
(provide code from coding manual)

C. Number of Full Page Advertisements

D. Number of Full Page DTC Ads

E. Number of Full Page OTC Ads

F. Total Number of Pages in Magazine

Instrument B: Direct-To-Consumer Advertisements

A. Type of Condition featured in DTC ad
(provide code from coding manual, if other also provide illness)

B. Sex of the Primary Characters/Models
(provide code from coding manual)