

## **The Effects of Direct-to-Consumer Antidepressant Advertisements on Young Adults**

### **Abstract:**

Depression, one of the most frequently diagnosed conditions in the United States, affects more than 10% of the American population. Accordingly, direct-to-consumer (DTC) advertisements for antidepressant drug products have become prevalent in American media. Depression is especially widespread among college students, with 30% of young adults reporting depressive symptoms. These young adults, in particular, seem to be susceptible to the viewpoints expressed in antidepressant advertisement campaigns. As a result, these DTC promotions have the potential to shape young adults' views on depression and antidepressant drug therapy. Specifically, the biomedical theory of depression, depression as a predominantly female disease, and the "magic bullet" capabilities of antidepressants are concepts touted in these advertisements, presenting a skewed representation of the condition to young adults.

**Key Words:** Advertising; Antidepressants; Biomedical Theory; Depression; Direct-to-Consumer Advertisements; FDA; Gender Gap; Magic Bullet; Young Adults

Through print, television, and online outlets, Americans are regularly exposed to direct-to-consumer (DTC) advertisements for prescription drugs. With more than 10% of Americans suffering from depression,<sup>1</sup> the significant market for antidepressant medication in the United States supports the widespread presence of antidepressant advertising in the media. Young adults, who are often subject to symptoms of depression due to social, academic, and professional pressures, comprise a major audience for these promotions. The high exposure to antidepressant advertising may present these young adults with skewed perceptions about depression and antidepressant therapy. As a result, DTC drug advertisements have become a source of debate among both healthcare and business specialists. Proponents argue that DTC advertising successfully educates consumers on aspects of their own healthcare, while opponents claim that this education is essentially biased since these campaigns are pharmaceutical company-sponsored.

### **Background**

#### *New Drugs: From Laboratories to Pharmacy Shelves*

The process of producing, manufacturing, and marketing prescription drugs for patient use is highly regulated in the United States, resulting from a series of Congressional legislation. Since the enactment of the 1938 Federal Food, Drug, and Cosmetics Act, the U.S. Food and Drug Administration (FDA) has been primarily responsible for overseeing the pharmaceutical

industry's compliance with federal regulations.<sup>2</sup> Consequently, some business experts view pharmaceutical companies as unsustainable business models.<sup>3</sup> In fact, companies invest an average of \$1,137 million dollars and 12 years for the development of one potential new drug agent, from conducting initial laboratory research to filing final FDA paperwork.<sup>4,5</sup> Further complicating the situation, most drugs prove to be inefficacious or dangerous for human use throughout the years of mandatory preclinical and clinical trials. Approximately 1 out of every 5000 drugs that undergo preclinical trials actually makes it to the shelves of a local pharmacy.<sup>4</sup> Thus, when companies finally succeed in introducing a prescription drug to the market, promotional funding to maximize product sales becomes a priority. Drug advertisements, directed at both prescribers and patients, are conventional in the healthcare field.

### *History of DTC Drug Advertisements*

Since the emergence of the first DTC advertisements for prescription drugs, the topic has been a source of considerable debate. Prior to 1997, the FDA required "any promotional material" for prescription drugs to include a comprehensive list of all associated risks.<sup>2</sup> Hindering the practicality of DTC advertisements, this prompted pharmaceutical companies to direct the large majority of advertisements to physicians instead. However, in 1997, the FDA "relaxed" this requirement, allowing for the resurgence of prescription drug promotions directed at the average American consumer.<sup>2</sup> Since then, pharmaceutical companies have shifted some of their focus to targeting consumers with DTC magazines, television, and Internet advertisements. From 2000 to 2011, the pharmaceutical industry's DTC advertisement expenditures increased more than twofold from 16% to 36% of total promotional spending.<sup>2,4</sup> Currently, these advertisements are commonplace in the United States. A Kaiser Family Foundation study found that 91% of adults reported seeing some form of pharmaceutical advertising in 2008.<sup>6</sup> However, despite its prevalence in the everyday lives of consumers, some argue against DTC advertisements. In fact, it is interesting to note that only the United States and New Zealand currently permit DTC prescription drug promotions, with other countries including those in the European Union completely prohibiting the practice.

### **The Antidepressant Market in the United States**

Depression, defined by the National Institute of Mental Health as long-lasting sadness that significantly debilitates an individual's daily life, affects millions of Americans.<sup>1,7</sup> As the second largest class of dispensed prescription drugs (only after cholesterol-lowering statins), antidepressants made up an \$11.9 billion market in 2011.<sup>8</sup> Among young adults in the United States ages 18-24, depression is a prevailing concern. A 2011 survey found that "30 percent of college students reported feeling so depressed that it was difficult to function."<sup>9</sup> Especially at universities and colleges, depression stemming from the combination of social, professional, and academic pressures is common among young adults. Since many are living independently for the first time and facing increasing responsibilities, it is understandable that problems will arise, leading to stress and decreased mood. However, as underscored by An et al., not all of these "life stressors" indicate major depressive disorder. Even though depression is a serious condition among college students, young adults should be careful not to mistake everyday stress as clinical depression. There are concerns about the possible over-prescription of antidepressants. Some worry that college students can "fake or exaggerate the symptoms of depression" to obtain

prescription-only antidepressants.<sup>10</sup> Particularly with the high exposure of antidepressant DTC advertisements in popular media, young adults are introduced to the availability of antidepressants as mood therapies.

### **The Biomedical Model of Depression**

According to the biomedical model, a brain chemical neurotransmitter imbalance, primarily involving serotonin and norepinephrine, is thought to be predominantly responsible for the development of depression.<sup>7</sup> Pharmacologically, the most widely-prescribed antidepressants function as Selective Serotonin Reuptake Inhibitors (SSRIs) and Serotonin Norepinephrine Reuptake Inhibitors (SNRIs).<sup>11</sup> SSRIs and SNRIs block serotonin and/or norepinephrine termination, prolonging the duration of neuronal activity. Clinically, antidepressant therapy regimens have been effective for many patients in improving mood and treating other symptoms of depression. This theory is currently “dominant in the United States,” with respected organizations such as the American Psychiatric Association and the Depression and Bipolar Support Alliance openly voicing their agreement with the biomedical model.<sup>12</sup> However, controversy over the theory exists. Many scientists attribute multiple factors, including genetics and environmental conditions, in contributing to the onset of depression in an individual. This multifaceted perspective has been supported by numerous studies. For instance, stress has been shown to diminish neuronal production in the hippocampus, a brain region that is markedly smaller in individuals suffering from depression, thereby suggesting a correlation between stress and depressive symptoms.<sup>6</sup> The complicated nature of depression calls for the movement towards individualized treatments. Prescription antidepressants can be combined with other promising alternative treatments such as psychotherapy, phototherapy, and even Chinese herbs.<sup>6, 13</sup>

### **Young Adults and Their Views on Depression**

Since antidepressants inherently support the biomedical theory of depression, the considerable presence of DTC advertisements for antidepressant therapy in American media emphasizes the concept that brain chemical imbalances cause depression. While antidepressants are effective for many, it is important to remember that the biomedical model only accounts for one potential cause of depression.<sup>14</sup> As described by psychiatrist George Engel in 1977, the biomedical model “leaves no room within its framework for the social, psychological, and behavioral dimensions of illness.”<sup>12</sup> The widespread antidepressant campaigns targeted at American consumers perpetuates the dominance of the biomedical theory of depression. Especially for young adults who can have limited knowledge about depression aside from these advertisements, DTC campaigns may depict an incomplete representation of depression.

For instance, Eli Lilly, the manufacturer of Prozac, published magazine advertisements immediately after the FDA redefined DTC drug advertisement regulations in 1997. The “Welcome Back” campaign, studied by Grow et al., appeared in multiple high-circulation magazines including *Reader’s Digest* and *Time*. Prozac’s two-page magazine spreads utilized “visual metaphors” symbolizing the contrast between depression and recovery. The left page consistently represented depression, with broken, weak imagery such as shattered eggs and “barren” trees. In juxtaposition, the right page pictured strong, complete symbols of recovery

such as blooming flowers and fully-leaved trees, respectively. The campaign's natural imagery reinforces the "biological paradigm" that chemical deficiencies in the brain are responsible for an individual's depression.<sup>15</sup> Eli Lilly reassures consumers that depression is natural and that Prozac can bring strength back into their lives.

Pfizer, the manufacturer for Zoloft, endorsed similar magazine advertisements featuring Zoloft's mascot on a black page (Figure 1). Combined with the dark theme, this imagery evokes the sense of hopelessness associated with depression. On the right side of the page, a simple neuronal synapse diagram depicts two cartoon neurons and small circles representing neurotransmitters.<sup>15</sup> The picture is graphically designed to look like chalk, and against the page's black background, conjures the iconic chalk and blackboard imagery commonly associated with school. Using this diagram, Pfizer educates consumers on the biomedical theory of depression, emphasizing the role of chemical neurotransmitters. Pristiq, another Pfizer antidepressant, features a similar neuron animation during a television commercial.<sup>16</sup> By omission, these basic explanations fail to entertain the other possible reasons behind depression. Young adults viewing these advertisements may not realize that factors including stress, genetic predisposition, and environment may also contribute to the onset of the condition.

Ultimately, this simplified representation of depression benefits the pharmaceutical industry. By supporting the biomedical theory's widespread acceptance, companies increase public demand for prescription antidepressants. Through pharmaceutical advertisements, the American public is inherently taught to support this theory, largely unaware of the other explanations for depression and the other alternative treatments that exist. Often, healthcare professionals, including physicians, are excellent resources for this additional information. However, young adults tend to lack the "longwithstanding relationships" with their physicians that older Americans have developed throughout years of appointments.<sup>5</sup> Without this well-established patient-physician relationship, young adults may not have trusted resources for healthcare information aside from media advertisements. Furthermore, young adults are also less likely to proactively "seek more [healthcare] information" compared to older individuals, since patients tend to become increasingly concerned about their own healthcare as they age.<sup>17</sup> Consequently, pharmaceutical company-sponsored campaigns, which are promotional in nature, significantly influence and, in some cases, monopolize the depression education that young adults receive.

### **Depression as a "Female Disease"**

Overwhelmingly, pharmaceutical companies seem to predominantly target female patients across numerous DTC antidepressant promotions. Grow et al. observed that 74% of the models in the GlaxoSmithKline's Paxil "Your Life is Waiting" campaign were female, compared to the 26% of male models. One Paxil magazine page (Figure 2) shows a woman physically separated from her husband and son by her depression,<sup>15</sup> presenting a literal gender gap between female and male. Other antidepressant manufacturers mirror this gender imbalance in their respective campaigns. Abilify commercials, with an animated approach, constantly feature the same brunette woman who is prescribed Abilify to treat her depression.<sup>18</sup> Wellbutrin XL and Effexor XR also only depict women as depressed patients in their promotions.<sup>19</sup> Pristiq commercials present different women with their wind-up toy counterparts, representing that those suffering from depression often lose willpower throughout their day, needing additional effort or "winding."<sup>16</sup> Men are

never depicted as wind-up dolls on Pristiq's manufacturer webpage, subliminally suggesting to viewers that men are not as susceptible to depression compared to women.

There is a distinct gender imbalance in the media's portrayal of depressed individuals in DTC antidepressant campaigns. Although women are indeed statistically diagnosed with depression two times more often than men in the United States,<sup>20</sup> millions of men still suffer from depression regardless. For young adults whose only familiarity with depression is through DTC advertisements, this can perpetuate the notion of depression as a predominantly-female disease. Thus, female adolescents may have an "inflated" view of their risk of depression.<sup>19</sup> Conversely, male adolescents may feel ashamed if they develop symptoms of depression, since the media consistently depicts females with the condition. In terms of treatment, this will inevitably perpetuate the "overdiagnosis among females and underdiagnosis among males," further widening the gender gap of depression.<sup>15</sup>

### **Antidepressants as "Magic Bullets"**

Another concern is that DTC advertisements often portray antidepressants as "magic bullets," an appealing concept to young adults with limited drug therapy knowledge. Termed by Paul Ehrlich, the magic bullet represents drugs acting on specified receptors in the body, creating desired therapeutic effects, much like a bullet hitting its target. Since most drug therapy stems from this concept, this was a significant contribution to the field of pharmacology. Likewise, promotional campaigns seem to advertise antidepressants as quick, easy cures for mood disorders. For those debilitated by depression, prescription medication appears promising. However, as with all drug therapy, there are risks and complications associated with antidepressants that DTC advertisements seem to overlook.

For instance, the Cymbalta "Depression Hurts" campaign aired commercials on many major television networks in the United States such as ABC.<sup>10</sup> One commercial featured a frowning woman, suffering from depression on a camping trip. Within seconds, the same woman is shown smiling, "quickly transformed into a gregarious happy" individual.<sup>10, 21</sup> With a small pill of Cymbalta, the woman's depression seems to be cured instantaneously. Other antidepressant advertisements across all media forms express a similar message.<sup>15</sup> However, critics worry that these "simple dramatizations" of actors in antidepressant commercials being cured of their depression can convey inaccurate perceptions to consumers.<sup>10</sup>

### **Antidepressant Side Effects and Risk**

Most drugs, whether they are available over-the-counter or prescription-only, are associated with side effects and other health risks. WebMD notes that SSRI antidepressants can cause a lengthy list of possible and unpleasant side effects, including nausea, anxiety, dry mouth, and even "loss of sexual desire." In children and young adults especially, there is a very serious increased risk of suicide during the beginning of a new antidepressant drug regimen, for which the FDA has issued a Black Box Warning.<sup>22</sup> Although a few of these risks are briefly mentioned in television and magazine antidepressant commercials, they can be easily missed. Magazine pages promoting antidepressants consistently use a smaller font size for side effect and health risk information.<sup>15,</sup>

<sup>23</sup> In television commercials, side effects are usually read verbally at a fast pace or displayed on

the screen in fine print, preventing viewers from fully processing all of the information.<sup>16, 18, 21</sup> Due to the minimal emphasis on antidepressant risks in DTC advertisements, consumers can have an incomprehensive view on antidepressants and be led into thinking that these drugs are safer than they actually are. As noted by An et al., young adults reported having generally “positive evaluation of antidepressant drugs” after watching a Cymbalta commercial, without fully understanding the negative aspects of drug therapy. Especially for those with limited prior knowledge about depression, the “repeated exposure of vivid dramatizations” in antidepressant advertisements leads to what Hawkins and Hoch label as “low involvement learning.”<sup>10</sup> As a result, young adults are susceptible to believe the glamorous portrayal of antidepressants in the media. On the other hand, among a group of surveyed individuals who personally suffered from depression and had experience with antidepressant therapy, a consensus of being “generally unimpressed” with the educational content in antidepressant advertisements was reached, implying that some advertisements lack sufficient emphasis on drug risks.<sup>24</sup>

### **Implications on Antidepressant Abuse**

Many studies, including one by Pettus et al, voice serious concerns that DTC antidepressant campaigns may lead to overprescribing of depression-treating drugs due to the “medicalizing of ordinary unhappiness.” Young adults, now aware of available mood treatments after viewing advertisements in the media, may be tempted to “seek out a quick but inappropriate medical solution” to “typical college stressors.”<sup>10</sup> Due to the dramatized instantaneous transformations portrayed in DTC antidepressant advertisements, consumers have come to view drugs as “magical” solutions to their problems.<sup>25</sup> Combined with the common lack of thoroughly explained health risks in advertisements, these concerns are implications for the abuse of antidepressants by young adults. Studies by Bell et al. and Mintzes et al. discovered prescribers had “increasing acquiesce to patient’s requests for the drugs they see in DTC advertising,” suggesting that antidepressant prescriptions may not be difficult for young adults to obtain.<sup>19</sup> Although limited research has been conducted directly on antidepressant abuse stemming from DTC antidepressant advertising in the media, it is an area that warrants further studies.

### **Benefits to Young Adults**

Admittedly, DTC antidepressant commercials also support considerable benefits to patient health education. Name recognition of commonly advertised antidepressants such as Zoloft, Prozac, Cymbalta, and Abilify has increased among young Americans.<sup>10, 26</sup> Additionally, one of the primary goals of DTC advertisements is to prompt further discussion between patients and their healthcare providers. Bell et al. discovered that 20% of surveyed patients initiated conversations with their physicians about an antidepressant they had seen advertised. Furthermore, 25% of participants admitted that seeing advertisements reminded them to take their own medications, implying that the significant presence of drug information in the media can help improve drug compliance.<sup>24</sup> Overall, DTC advertisements for prescription drugs encourage patient education, creating “patient autonomy” and consumers that are involved in their own healthcare.<sup>23</sup>

## Conclusion

Although DTC antidepressant advertisements prove to be beneficial educational sources for young adults by increasing familiarity with available treatments and encouraging further discussion with physicians, they also negatively influence the way young adults view depression. Since young adults tend to lack strongly-developed relationships with their physicians and are less likely to actively seek healthcare information compared to older patients, pharmaceutical company-sponsored promotions are often their only easily-accessible sources of depression information. These advertisements consistently convey the industry's bias towards the biomedical theory of depression, portray depression as a predominantly-female disease, and dramatize antidepressant pills as magic bullets. Concurrently, information on health risks related to antidepressant therapy is often minimally emphasized. Given the prevalence of depression in the United States, such DTC advertisements should be subject to tighter FDA regulations and move towards an educational, rather than a promotional, direction.

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