

**Examining the Current Debate Over Antidepressant Overprescription and its Impact on Patients' Beliefs and Behaviors**

A Research Paper submitted to the Department of Engineering and Society

Presented to the Faculty of the School of Engineering and Applied Science  
University of Virginia • Charlottesville, Virginia

In Partial Fulfillment of the Requirements for the Degree  
Bachelor of Science, School of Engineering

**Allison C. Kenney**

Spring 2023

On my honor as a University Student, I have neither given nor received unauthorized aid on this assignment as defined by the Honor Guidelines for Thesis-Related Assignments

Advisor

Kent A. Wayland, Department of Engineering and Society

## **Introduction**

Most patients trust their health care providers to create safe and effective treatment plans, including any medications they prescribe. For many patients struggling with mental illness, this means trusting doctors to appropriately prescribe them antidepressant medications.

Antidepressants are drugs that change the levels at which certain signaling chemicals, known as neurotransmitters, are present in the brain. While they are most commonly used to treat clinical depression, these drugs can also be used to treat obsessive compulsive disorder (OCD), generalized anxiety disorder, and post-traumatic stress disorder (PTSD) (*Overview - Antidepressants*, 2021).

Unfortunately, concerns have been raised by both patients and healthcare professionals that these drugs are being prescribed inappropriately. Many practitioners believe that antidepressants are being prescribed too frequently and for excessive durations. They also argue that this type of medication may be ineffective for many patients, if anyone at all. However, opponents claim that it has been repeatedly demonstrated that antidepressants can provide profound relief to patients suffering from clinical depression. Some advocates for antidepressants go as far as to accuse critics of trying to decry this medication purely for media attention. This debate has endured for years within the psychiatric field and has yet to be resolved.

This research will seek to explore the contemporary arguments presented by both sides of the antidepressant prescription debate. It will not aim to directly answer the question “Are antidepressants overprescribed?” but it will involve a literature review of published work from healthcare professionals and scholars. These works will be studied in order to identify their conclusions and the methods used to reach those conclusions. From this, we will have an understanding of the type of evidence and main arguments being made by both groups.

Prevailing patient beliefs regarding antidepressant medications will also be explored, including how many patients take their medications as prescribed. This section of research will seek to discover why patients choose to take or not take their medications, and will be connected to the findings of the literature review to better understand what arguments seem to be reaching patients and how it influences patient behaviors and beliefs. Finally, it will be discussed how this relationship could inform future drug development efforts and patient treatment plans.

### **History of Antidepressants**

As described earlier, all antidepressants are medications that alter neurotransmitter levels in order to treat mental illnesses such as depression. Most commonly, these drugs target serotonin and noradrenaline, which are linked to mood and emotion. There are six main types of antidepressants: selective serotonin reuptake inhibitors (SSRIs), serotonin-noradrenaline reuptake inhibitors (SNRIs), noradrenaline and specific serotonergic antidepressants (NASSAs), tricyclic antidepressants (TCAs), serotonin antagonists and reuptake inhibitors (SARIs), and monoamine oxidase inhibitors (MAOIs) (*Overview - Antidepressants*, 2021). SSRIs are the most commonly prescribed type of antidepressants as they are considered to cause fewer side effects and solely alter serotonin levels. SNRIs, NASSAs, and SARIs are similar to SSRIs and are effective for patients who do not respond well to treatment with SSRIs. TCAs and MAOIs are both older forms of antidepressants and are no longer recommended as the first form of treatment due to high risk of serious side effects (Fosbol et al., 2009; *Overview - Antidepressants*, 2021).

The first available antidepressant medication was a MAOI that was marketed as an antitubercular drug despite clinical findings that indicated its utility in treating depression. In the following year, 1959, a TCA known as Tofranil was approved by the FDA for the treatment of depression, making it the first medication specifically marketed towards depression patients. By

the late 1960s, further inquiries had been made into the underlying mechanisms of depression. The hypothesis that serotonin had a significant role in the disorder was gaining traction quickly. In 1974, the first successful SSRI study was published. It encouraged researchers to continue to investigate this type of antidepressant, and in 1988 the SSRI Prozac entered the medication market. While researchers have continued to improve upon these drugs and develop new types of antidepressants, SSRIs such as Prozac have remained the most common medications first prescribed to patients seeking treatment for depression since their introduction to market (Hillhouse & Porter, 2015).

### **The Debate Surrounding Antidepressant Prescription**

Overprescription is defined as when a clinician prescribes a patient an amount of medication that is not clinically justified as it is at a greater dose, frequency, or duration than what is absolutely necessary. It is the most common form of erroneous prescribing, and can occur both intentionally and unintentionally (Singier et al., 2021). Debate has arisen in the field of psychiatry as to whether or not antidepressants are being overprescribed globally. Most of the scholarly debate is centered around the US and UK, but touches on countries across the world.

This controversy can most largely be attributed to the absence of a strict framework for defining the overprescription of antidepressants specifically. Professor Adrian Preda of UC Irvine expressed that “the issue with depression is that we are looking at a diagnosis complicated by a lack of hard biological markers” (Spence, 2013). Like many psychiatric disorders, depression is not diagnosed by measuring specific neurotransmitter levels or other biological markers. Additionally, once taken, antidepressants cannot be monitored in the same way some psychiatric medications are to ensure they are acting at the optimal level. For example, patients taking lithium to treat bipolar disorder are routinely monitored by their providers to verify that

their lithium serum levels are neither too high or low, which is used to inform their prescriptions (Nederlof et al., 2018). As there are no standardized biological metrics being used in diagnosis or treatment, medical professionals are left to form their own opinions as to what is considered appropriate prescription. This leaves room for variance in opinion, thus creating the current debate over the prevalence of antidepressant prescription.

## **Methods**

This research will be conducted in the style of a systematic literature review. More specifically, the metasynthesis framework developed by Lachal et al. This framework has been known to be used in thematic analyses of medical topics and is appropriate to be applied to this research. The metasynthesis can be broken up into six distinct research steps: strictly defining the research question, rigorously selecting studies, assessing quality of the studies, examining the data in each study, analyzing the data to identify themes across the studies, and synthesizing a final understanding from the analysis (Lachal et al., 2017). Of particular interest is the data analysis step. The data analysis portion of the review will largely consist of coding the papers included in the review, allowing for key themes to be identified and subsequently analyzed to determine when and how they are being used in the arguments.

## **Literature Review Findings**

The literature review found substantial discussion from both sides of the debate in the forms of research studies involving patients, meta-analysis of existing studies, and opinion pieces written by experts in the field of psychiatric treatment. Consistent themes were found across both arguments, and interestingly it was found that each major claim had multiple sources to substantiate it.

Studies and authors presenting evidence pointing to antidepressants not being overprescribed tended to create arguments related to the seriousness of treating patients with clinical depression and to the competence of the physicians prescribing the medication. Recent studies have shown that despite the rising number of depression diagnoses and antidepressant prescriptions, the condition is still undertreated (Moore et al., 2009). Furthermore, the increase in prescriptions can be largely attributed to patients who were not previously receiving adequate doses or durations of treatment (Moore et al., 2009; Simon et al., 2015). Multiple studies have shown that physicians are appropriately prescribing these medications and exercise a great deal of caution in their treatment plans. It was found that the instance rate of patients being underprescribed was greater than that of patients being overprescribed (Hyde et al., 2005; Simon et al., 2015). Doctors and patients alike have raised questions regarding the efficacy of these drugs. In response to that, advocates of antidepressants point to studies that demonstrate that this class of drugs is as effective as many other common medications such as corticosteroids for asthmas, antipsychotics for schizophrenia, and bisphosphonates for osteoporosis (Leucht et al., 2015). Much of the data available related to the medication's effectiveness is from studies where most of the patients were diagnosed with severe depression, in line with the National Institute for Health and Care Excellence's guidelines (*Depression in Adults: Treatment and Management*, NICE, n.d.). In response to critiques that antidepressants are ineffective in mild cases of depression, experts have asserted that it was never claimed that they are effective in such cases and that the question remains unresolved (Reid, 2013).

The opposing viewpoint, those arguing that antidepressants are overprescribed, focused on arguments related to patient experiences and questioning the research backing the evidence presented by medication advocates. Experts on this side of the debate question the existing

definitions of depression as they are vague and seem to encompass a variety of human experiences (Spence, 2013). Depression is defined in the DSM-5, the leading diagnostic tool for psychiatrists, as at least two weeks of depressive symptoms that have caused distress or impairment, which some doctors claim lacks rigor and leads to inappropriate diagnoses (O'Connor et al., 2009; Spence, 2013). Antidepressant prescriptions worldwide have increased significantly over the past 20 years, and data collected in 2015 found that 69.4% of depression patients are medicated (Luo et al., 2020). Some find this alarming and to be a clear indication that these drugs are being inappropriately prescribed. Critics of antidepressants often argue that they are not effective forms of treatment for most patients and do more harm than good. A review paper found that only one in seven patients report benefitting from their medication, and multiple studies claim that antidepressants are only marginally more effective than placebo (Kirsch et al., 2008; Safer, 2019; Spence, 2013). In particular, studies point to these medications being virtually ineffective at treating mild and moderate depression (Kirsch et al., 2008). Finally, it has been asserted that current research does not support long term treatment with these drugs as there is a high rate of recurrent episodes and at times severe side effects (Luo et al., 2020).

### **Discussion of the Arguments**

The two arguments had several themes in common, mainly the topics of the rising number of prescriptions and the effectiveness of the medications. However, the way these questions and the greater debate at hand were approached was distinctly different. Antidepressant advocates focused on explaining why diagnoses and prescriptions rates had increased over the last 20 years. In contrast, the opposition did not appear to emphasize this aspect beyond pointing out that the rates had increased. The competence and ethics of physicians was stressed through multiple studies, but was never actually addressed by critics. Those who

believe these medications are overprescribed centered their argument around questioning their effectiveness and shedding light on the side effects that patients experience. The effectiveness piece was addressed by studies that came to different conclusions, but the opposition never acknowledged the medications' side effects in their articles.

Both groups aimed their discussions at a wide audience, however, each seemed to have an angle to their argument that appealed to a particular group. The advocates of antidepressants appeared to target physicians through their emphasis of the importance of providing medical care for depression patient and the integrity and competence of practitioners. The arguments put forth appealed to their pride and sense of duty as healthcare providers. More weight seemed to be put on the act of prescribing and the physician's thought process than the patient's experience after they receive the prescription. In contrast, those who believe antidepressants are overprescribed gave the impression of appealing to patients. The main tenants of their argument were focused on patient outcomes and quality of life while taking the medication. The associated side effects were discussed as well as the high rate of episode recurrence even after patients underwent treatment for long periods of time. Much of the discussion was about topics that directly impact individual patients, as opposed to discussions of global prescription trends and evaluations of prescriber consistency. It would seem that patients would identify with more of the points made in this discussion than in the former.

### **Prevailing Patient Perceptions of Medication**

Many studies have sought to capture the prevailing beliefs and behaviors of psychiatric patient taking antidepressants. These studies give insight into how patients are using their prescriptions and their motivations in doing so. It is generally well known in psychiatry that



patient adherence to treatment plans is poor, but this data clarifies what perceptions are correct and gives qualitative metrics that can be used to inform strategies moving forward.

A study conducted in 2014 utilized a patient survey to acquire a variety of metrics related to patient experience on antidepressants and their prevailing beliefs about the medication. Of the included patients, 32% said they were not convinced of the efficacy of antidepressants. In a related question, 30% of patients responded that they were not convinced that antidepressants would help them. 67% of respondents disagreed that their medication resolved their problems, and 73% disagreed that the longer you use antidepressants, the better they work (Wouters et al., 2014). While the first two metrics are not a majority of the respondents, they still represent a sizable portion of the patients. Those questions in particular sought to find out if patients believed their medication would be an effective treatment for their condition. This is significant because a social norm in the medical space is to trust that the medications you are prescribed will alleviate the symptoms you are experiencing. One-third of patients not abiding by that norm is abnormal, and is part of why the discussion of patient perceptions is important.

Interestingly, these data points align with some of the beliefs held by those who argue that antidepressants are overprescribed. Patients were divided on topics of medication efficacy, if medication was an all-encompassing solution, and if long term treatment plans were effective, all of which were heavily emphasized in the studies and articles associated with argument presented. The opposing viewpoint was represented by the 68% of respondents that were convinced of the efficacy of antidepressants, but in line with social norms it seems this level of confidence, if not a higher one, should be expected of a common medication. The correlation of ideas here is of note.

It would be a fallacy to suggest that regular patients were reading scientific journal articles, but the proposition that arguments being presented in scientific forums were making their way into mainstream media is reasonable. Antidepressants have a long history in healthcare, whereas largescale critiques of the drug group have only gained traction in the last 10-15 years. This is both relatively recent and important as the movement has the potential to upend a common form of treatment that has been used for decades. Additionally, the movement comes at a time when all overprescription is being examined in the media (Reid, 2013). For example, the book *Pharmageddon* by David Healy was a powerful argument against the increasing pharmaceuticalization of health care that gained recognition in mainstream media (Healy, 2012). Scholars have acknowledged that antidepressants, along with some other forms of psychiatric medication, have garnered heightened media attention over the past decade due to the introduction of the debate over their overprescription. Some experts in the field have decried this media attention as a “sure-fire crowd pleaser for the press” due to the existing “profound suspicion” of the medication, but others feel that it is warranted and welcome attention (Reid, 2013).

One Danish study aimed to understand how media coverage of antidepressants impacted patient beliefs. It identified the different ways media outlets were framing the debate, and found that none of them painted antidepressants in a positive light. In particular, it focused on how once the media identified the story they wanted to tell, they utilized agenda-setting, priming, and framing to persuade their audience to become skeptical of antidepressants. The study found that following a period of heightened media coverage, more patients were wary of the efficacy of the medications and there was an increase in the number of patients who stopped taking their medication (Green Lauridsen & Kälvemærk Spørring, 2018).

The findings of this study can be applied to wider populations such as the US or globally. While the majority of the debate surrounding overprescription of antidepressants is done through academic literature, some of the arguments made have been introduced into mainstream media. The evidence provided by researchers who believe these medications are being prescribed inappropriately is framed in a way that is relatable and important to patients and the general population, making it a better story for media outlets to present to their audiences. It is within reason to connect the rhetoric used by this group to the media attention, and subsequently to patient beliefs and behaviors. In this way, the academic debate surrounding antidepressants has impacted patients by decreasing their confidence in the effectiveness of their medications and by discouraging them from continuing their treatment plans.

## **Conclusion**

In 2020, the National Institute of Mental Health published that over 8% of the US population had experienced depression within the year (*Major Depression*, n.d.). It is a prevalent condition that affects the livelihood and well-being of many across the globe, making its treatment of great concern for health care entities and personnel. A common form of treatment is medication with antidepressants. Some physicians and researchers believe them to be great tools for treating depression, while others argue that they are grossly overprescribed and as not as effective as once believed. The former group tends to appeal to the sensibilities of health care providers by discussing the importance of treating depression and the abilities of doctors to appropriately prescribe medication. The latter group incidentally appeals more to patients through their emphasis of wanting lasting change for patients and acknowledging the side effects that patients suffer from. As a result of its relatability and potential for interesting headlines, this argument has entered the mainstream media. Patients who access this media are more likely to

question the efficacy of their medication and cease treatment. In this way, the scholarly debate surrounding antidepressants has a large influence on patient beliefs and behaviors.

In addition to connecting the phenomenon of patient skepticism with original sources of information, this research also sought to be an impartial literature survey. All existing literature reviews arrived at a conclusion to the question, and appeared to selectively include studies with the goal of arriving at that conclusion. This research provides a useful addition to the field in that it examined both sides of the debate in order to determine the main themes at work and present them without asserting that one argument was superior to the other. By remaining impartial, it provides an unbiased look into the rhetoric being used.

Finally, in connecting patient, physician, and researcher beliefs, this research lays the groundwork for future advancements in the treatment of depression. In future drug development efforts, pharmaceutical companies should take into account all of the perspectives voice, in particular patient concerns over side effects and drug costs. In the development of treatment plans, perhaps more collaboration across all parties would lead to a better outcome. Researchers could be more transparent with physicians regarding what populations medications are truly effective for, while also focusing their efforts on investigating the efficacy of these drugs in cases of mild to moderate depression. Physicians could emphasize having candid conversations with patients about the medications they are prescribing and encourage them to do their own research instead of forming opinions based on mass media stories. With more emphasis on open communication, patients could discuss more with their doctors about their concerns instead of not taking their medication as prescribed.

Overall, an understanding of what information is available in the field and what aspects of it are being presented to patients is important in developing new treatment plans.

Strengthening this understanding will help continue to advance care for depression and offer patients the best treatment possible.

## Works Cited

- Fosbol, E. L., Gislason, G. H., Poulsen, H. E., Hansen, M. L., Folke, F., Schramm, T. K., Olesen, J. B., Bretler, D.-M., Abildstrom, S. Z., Sorensen, R., Hvelplund, A., Kober, L., & Torp-Pedersen, C. (2009). Prognosis in Heart Failure and the Value of  $\beta$ -Blockers Are Altered by the Use of Antidepressants and Depend on the Type of Antidepressants Used. *Circulation: Heart Failure*, 2(6), 582–590.  
<https://doi.org/10.1161/CIRCHEARTFAILURE.109.851246>
- Green Lauridsen, M., & Källemark Sporrang, S. (2018). How does media coverage effect the consumption of antidepressants? A study of the media coverage of antidepressants in Danish online newspapers 2010-2011. *Research in Social & Administrative Pharmacy: RSAP*, 14(7), 638–644. <https://doi.org/10.1016/j.sapharm.2017.07.011>
- Healy, D. (2012). *Pharmageddon*. Berkeley, University of California Press.
- Hillhouse, T. M., & Porter, J. H. (2015). A brief history of the development of antidepressant drugs: From monoamines to glutamate. *Experimental and Clinical Psychopharmacology*, 23(1), 1–21. <https://doi.org/10.1037/a0038550>
- Hyde, J., Calnan, M., Prior, L., Lewis, G., Kessler, D., & Sharp, D. (2005). A qualitative study exploring how GPs decide to prescribe antidepressants. *The British Journal of General Practice: The Journal of the Royal College of General Practitioners*, 55(519), 755–762.
- Kirsch, I., Deacon, B. J., Huedo-Medina, T. B., Scoboria, A., Moore, T. J., & Johnson, B. T. (2008). Initial Severity and Antidepressant Benefits: A Meta-Analysis of Data Submitted to the Food and Drug Administration. *PLoS Medicine*, 5(2), e45.  
<https://doi.org/10.1371/journal.pmed.0050045>

- Lachal, J., Revah-Levy, A., Orri, M., & Moro, M. R. (2017). Metasynthesis: An Original Method to Synthesize Qualitative Literature in Psychiatry. *Frontiers in Psychiatry*, 8, 269. <https://doi.org/10.3389/fpsyt.2017.00269>
- Leucht, S., Helfer, B., Gartlehner, G., & Davis, J. M. (2015). How effective are common medications: A perspective based on meta-analyses of major drugs. *BMC Medicine*, 13, 253. <https://doi.org/10.1186/s12916-015-0494-1>
- Luo, Y., Kataoka, Y., Ostinelli, E. G., Cipriani, A., & Furukawa, T. A. (2020). National Prescription Patterns of Antidepressants in the Treatment of Adults With Major Depression in the US Between 1996 and 2015: A Population Representative Survey Based Analysis. *Frontiers in Psychiatry*, 11, 35. <https://doi.org/10.3389/fpsyt.2020.00035>
- Major Depression*. (n.d.). National Institute of Mental Health (NIMH). Retrieved April 4, 2023, from <https://www.nimh.nih.gov/health/statistics/major-depression>
- Moore, M., Yuen, H. M., Dunn, N., Mullee, M. A., Maskell, J., & Kendrick, T. (2009). Explaining the rise in antidepressant prescribing: A descriptive study using the general practice research database. *BMJ*, 339, b3999. <https://doi.org/10.1136/bmj.b3999>
- Nederlof, M., Heerdink, E. R., Egberts, A. C. G., Wilting, I., Stoker, L. J., Hoekstra, R., & Kupka, R. W. (2018). Monitoring of patients treated with lithium for bipolar disorder: An international survey. *International Journal of Bipolar Disorders*, 6, 12. <https://doi.org/10.1186/s40345-018-0120-1>
- O'Connor, E. A., Whitlock, E. P., Gaynes, B., & Beil, T. L. (2009, December). *Table 1, Primary DSM-IV depression disorders, criteria for adults* [Text]. Agency for Healthcare Research and Quality (US). <https://www.ncbi.nlm.nih.gov/books/NBK36406/table/ch1.t1/>

- Depression in adults: Treatment and management, NICE.* (n.d.). Retrieved April 3, 2023, from <https://www.nice.org.uk/guidance/ng222>
- Overview—Antidepressants.* (2021, February 5). Nhs.Uk. <https://www.nhs.uk/mental-health/talking-therapies-medicine-treatments/medicines-and-psychiatry/antidepressants/overview/>
- Reid, I. C. (2013). Are antidepressants overprescribed? No. *BMJ*, *346*, f190. <https://doi.org/10.1136/bmj.f190>
- Safer, D. (2019). Overprescribed Medications for US Adults: Four Major Examples. *Journal of Clinical Medicine Research*, *11*(9), 617–622. <https://doi.org/10.14740/jocmr3906>
- Simon, G. E., Rossom, R. C., Beck, A., Waitzfelder, B. E., Coleman, K. J., Stewart, C., Operskalski, B., Penfold, R. B., & Shortreed, S. M. (2015). ANTIDEPRESSANTS ARE NOT OVER-PRESCRIBED FOR MILD DEPRESSION. *The Journal of Clinical Psychiatry*, *76*(12), 1627–1632. <https://doi.org/10.4088/JCP.14m09162>
- Singier, A., Noize, P., Berdaï, D., Daveluy, A., Arnaud, M., Molimard, M., Bégaud, B., & Salvo, F. (2021). Medicine misuse: A systematic review and proposed hierarchical terminology. *British Journal of Clinical Pharmacology*, *87*(4), 1695–1704. <https://doi.org/10.1111/bcp.14604>
- Spence, D. (2013). Are antidepressants overprescribed? Yes. *BMJ*, *346*, f191. <https://doi.org/10.1136/bmj.f191>
- Wouters, H., Bouvy, M. L., Van Geffen, E. C., Gardarsdottir, H., Stiggelbout, A. M., & Van Dijk, L. (2014). Antidepressants in primary care: Patients’ experiences, perceptions, self-efficacy beliefs, and nonadherence. *Patient Preference and Adherence*, *8*, 179–190. <https://doi.org/10.2147/PPA.S53748>