



Pharmaceutical Marketing and the Use of Mental Health Medications

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In 2010, more than one out of every five American adults filled a prescription for a mental health medication – for one of the many antidepressants, antipsychotics, or stimulant medications used to treat psychological or behavioral disorders. The market for such medicines is big business, bringing in close to \$35 billion in 2010 and accounting for 11.4% of all U.S. spending on pharmaceuticals.

But Americans living in various parts of the South are much more likely than people living in other places – in fact, forty percent more likely – to take antidepressant, stimulant or antipsychotic medications. That could happen for various reasons, of course. Maybe residents of different regions vary in their susceptibility to relevant disorders. Or maybe health care providers have different views about these medications. My research colleagues and I have probed various possible explanations and learned that high numbers of physicians plus high levels of spending for pharmaceutical marketing are factors that help to explain why people living in certain areas are considerably more likely than residents of other places to receive prescriptions for mental health medications.

Where are Mental Health Medications Most Used?

There are large differences in the rate at which these medications are consumed both within states and among states. For example, on average 10.4% of U.S. residents filled a prescription for an antidepressant. But the usage ranged a lot – from less than 1 in 200 residents receiving a prescription for an antidepressant in some areas, to more than 80 in every 200 residents. We see similar variation in the use of stimulant and antipsychotic medications.

We identified large, overlapping areas where residents were much more likely to use mental health medications – all areas in the southeastern part of the United States. Within these areas:

- Antipsychotic use was 42% higher than in the rest of the country
- Antidepressant use was 46% higher than in the rest of the country
- Stimulant use was 77% higher than in the rest of the country

Accounting for Geographic Variations

For all three types of medications – antidepressants, antipsychotics, and stimulants – we checked to see whether rates of illness, differences in health insurance coverage, variations in local access to physicians, or

variations in money spent to market pharmaceuticals might help to explain geographical variations in medication use.

- Surprisingly, we did not find that rates of depression accounted for varying rates of people using antidepressant medications. However, people in places with higher rates of attention deficit-hyperactivity disorder did tend to use stimulant medicines more frequently.
- Access to health care, measured as the number of physicians per 10,000 residents, had the strongest association with use. As we looked from places in the bottom quarter for physician availability to places in the top quarter, the rate of stimulant use rose by 80%, antidepressant use went up by 56%, and antipsychotic use increased by 73%. If there are lots of doctors per capita in an area, we also typically find higher numbers of prescriptions for mental health medications.
- Comparing patterns at the state level, we also found a significant positive relationship between money spent to advertise pharmaceuticals and rates of use of all three types of mental health medications. Compared to residents of states with marketing expenditures in the bottom quarter, residents of states with advertising expenditures in the top quarter used stimulants at an 11% higher rate, used antidepressants at a 13% higher rate, and used antipsychotics at a 10% higher rate.

How can we understand the findings about marketing? Do salespeople have the biggest impact in areas with relatively few physicians, where overburdened doctors have a special need to get information about new developments in the drug world? We checked to see if this argument fits the evidence, and learned this is not the case. Pharmaceutical marketing has the greatest impact in places where there are a lot of doctors.

Is a Gift Ever Really Just a Gift?

In recent years, pharmaceutical marketing has come under greater scrutiny and regulation. Medical schools and state governments – even the Pharmaceutical Research and Manufacturers of America – have all adopted rules and guidelines to govern the interaction between physicians and representatives of the pharmaceutical industry. New rules are meant to reduce conflicts of interest between sales people proffering gifts and the physicians who receive them. Defenders of current sales practices contend that industry representatives give busy doctors timely and important information and updates. But critics worry that choices of medicines are inappropriately swayed by promotions and rewards. Until recently, it has been impossible to test these arguments, because data on marketing expenditures were not public. Our research underlines the need to learn more, because it suggests that marketing efforts play a key role in rates of use of mental health medications, especially in places with lots of physicians per capita.

Of course, the geographical variations themselves do not tell us whether patients are getting better health care in places with lots of drug use. We will be able to learn more soon, due to the Physician Payments Sunshine provision of the 2010 Affordable Care Act, a provision that requires drug and medical device manufacturers to publicly report gifts and payments they make to physicians. Researchers will be able to assess how pharmaceutical marketing impacts health care services. And patients across America will also learn how often their doctors eat lunch on the tab of the drug manufacturers.