

Researchers investigate if pharmacological treatment of ADHD reduces criminality

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A [study](#) in the *Journal of the American Academy of Child and Adolescent Psychiatry* found that pharmacological treatment of attention-deficit/hyperactivity disorder (ADHD) reduced violence- and public-order related crimes. However, it did not reduce other types of crimes, among patients with ADHD in early to late adolescence considered to be in the gray zone (or on the margin) for such treatment.

This study uses variation in health care providers treatment preference as the basis for a quasi-experimental design that examines the effect of pharmacological treatment of ADHD on criminality among patients in the gray zone for treatment. Due to their health care providers' treatment preference, some patients may not receive pharmacological treatment.

This study found considerable variation in rates of pharmacological treatment of ADHD between clinics, which impacted patients' treatment. Pharmacological treatment of ADHD had a protective effect on violence- and public-order related charges, respectively, whereas there was no support for effects on other crimes (e.g., drugs, traffic, and property). Consistent with existing research this study also found that patients with ADHD had a higher risk of all types of crimes compared to the general population.

This is the first study to combine a quasi-experimental design with detailed population-wide registry data on types of crime and multiple years follow-up to assess effects of pharmacological treatment of ADHD on long-term criminal outcomes. Causal knowledge is challenging to establish since large-scale RCTs are ethically and practically unfeasible, while [observational studies](#) are limited by many potential confounding variables making treatment and control groups different.

To address these issues, this study combines a quasi-experimental design

with population-wide registry data on all patients aged 10 to 18 years who were diagnosed with ADHD in 2009–2011 (n=5,624), including their clinics, receipt of ADHD medication, and criminal charges with four years follow-up.

In these "instrumental variable" analyses, provider preference for pharmacological treatment acts as a source of randomization to treatment for patients in the gray zone for treatment where clinicians' treatment decisions vary most. The logic can be illustrated by two patients with ADHD who are otherwise similar apart from one patient being treated due to seeing a clinician with a high treatment preference, whereas the other is not treated due to seeing a clinician with a low treatment preference.

This study is conducted in Norway, importantly characterized by all treatment of ADHD among children and adolescents taking place in the public health care system with virtually no [private sector](#), and providers are assigned by patients' residence.

Pharmacological treatment of ADHD is commonly used in clinical practice, but the impact on crime remains debated. Some clinicians may hold a positive or "liberal" perspective, arguing that pharmacological treatment can reduce criminality by improving core symptoms of ADHD (inattention, hyperactivity, and impulsivity), whereas other clinicians advocate a negative or "restrictive" perspective based on concerns for medicalization, stigma and unnecessary side-effects.

While this study finds evidence of causal protective effects of pharmacological treatment on criminality, these effects importantly concern specific types of crime for a particular patient group, and the effect sizes imply that many need to be treated to prevent one additional crime. Nonetheless, this study contributes novel causal knowledge of treatment effects that may be relevant for clinicians and researchers in

their overall assessment of the effects of pharmacological [treatment](#) of ADHD.

This study was first-authored by Dr. Tarjei Widding-Havneraas and is a part of the ADHD Controversy Project led by Professor Arnstein Mykletun, which uses this and similar research designs to examine multiple outcomes including [crime](#), education, comorbidities, injuries, and mortality.

More information: Tarjei Widding-Havneraas et al, Effect of Pharmacological Treatment of Attention-Deficit/Hyperactivity Disorder on Criminality, *Journal of the American Academy of Child & Adolescent Psychiatry* (2023). [DOI: 10.1016/j.jaac.2023.05.025](https://doi.org/10.1016/j.jaac.2023.05.025)

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