# MI-CRE 2025 Annual Research Symposium and Policy Forum

## *From misdiagnosis to management: An interrupted time-series analysis of medication trends before and after initiating psychostimulant medications in female patients with ADHD*

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## Abstract

**Background and Aims:** Attention deficit hyperactivity disorder (ADHD) is increasingly being diagnosed in adult females. Prior to diagnosis, the symptoms of ADHD can be attributed to other mental health conditions, such as anxiety and depression. This study aims to examine changes in the prescribing of psychotropic and related medications among adult females in the two years before and after initiating ADHD medication.

**Design and Methods***:* A 10% sample of national dispensing records were used to identify female patients dispensed an ADHD medication for the first time between 2013 and 2022 (n=6,068). Using interrupted time-series analysis, we analysed dispensing patterns for antidepressants, anxiolytics, antipsychotics,

hypnotics/sedatives, oral contraceptives, beta blockers, antihypertensives, and cardiovascular medications in the two years before and after ADHD medication initiation.

**Results***:* Dispensing of mental health medications increased in the two years before ADHD treatment (antidepressant: 0.43%; anxiolytic: 0.08%; antipsychotic: 0.06%; hypnotic/sedative: 0.02%), followed by step decreases in antidepressants (-2.01%) and anxiolytics (-0.39%) at the time ADHD medications were initiated, with all mental health medications showing significantly altered post-initiation trends (antidepressant: -0.55%; anxiolytic: -0.12%; antipsychotic: -0.07%; hypnotic/sedative: -0.03%). Oral contraceptive use declined pre-initiation (-0.02%), with no significant changes at or after initiation. Cardiovascular medications increased pre-initiation (antihypertensive: 0.04%; beta blocker: 0.02%; overall: 0.09%), with step increases at ADHD medication initiation (antihypertensive: 1.28%; overall: 1.43%), and only overall cardiovascular use showed a different post-initiation trend (-0.04%).

**Conclusion***:* The findings suggest that ADHD pharmacotherapy may reduce reliance on some psychotropic medications, potentially reflecting prior misdiagnosis or overlapping symptom management. These results highlight the importance of accurate diagnosis and comprehensive treatment planning in adult females with ADHD.