

Two Decades of ADHD Diagnosis Trends in British Columbia: A Population-Based Study

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Background

- Rising ADHD Diagnoses:** Most studies have focused on prevalence, which may mask emerging diagnostic trends for a chronic condition like ADHD.
- Diagnostic Criteria Change:** DSM-5 (2013) introduced “subtle but important” changes, but their impact remains unquantified.
- Pandemic effects:** COVID-related stressors may have contributed to the rising rates of ADHD diagnoses, yet its long-term vs. short-term effects remain unclear.
- Data Gap:** No population-level ADHD data in British Columbia (BC) for over a decade.
- Importance:** Understanding age- and sex-specific shifts in ADHD diagnoses can help anticipate future health system needs.

Methods

Design

Population-based retrospective cohort study

Data Sources

BC administrative databases

- Physician services
- Community pharmacy dispensations
- Hospital admissions
- Emergency department visits

Outcome

ADHD diagnosis

- ≥1 ADHD-specific prescription including Methylphenidate, Lisdexamfetamin, Dextroamphetamine, Mixed amphetamine salts, Atomoxetine, Guanfacine, **or**
- ≥1 ADHD hospitalization with ICD-10 F90, **or**
- ≥1 ADHD physician visit with ICD-9 314 **and** another ADHD visit, ADHD prescription, or ADHD hospitalization within one year

Participants

BC residents aged 3 to 29 years between 2003 and 2023

Stratified by

Sex: male and female

Age groups:

- Preschool: 3–5 years;
- Elementary school: 6–12 years;
- High school: 13–17 years;
- Young adults: 18–29 years.

Statistical Analysis

Interrupted time series analyses

$$Y_t = \beta_0 + \beta_1 \cdot \text{time} + \beta_2 \cdot I_{2014} + \beta_3 \cdot \text{time} \cdot I_{2014} + \beta_4 \cdot I_{2021} + \beta_5 \cdot \text{time} \cdot I_{2021},$$

β_0 : Baseline intercept;
 β_1 : Baseline trend;
 β_2 : Immediate level change following the introduction of DSM-5 in 2013;
 β_3 : Trend change post-DSM-5;
 β_4 : Immediate level change following the COVID-19 pandemic in 2020;
 β_5 : Trend change post-COVID.

Objectives

- Quantify ADHD incidence and prevalence (preschool to young adults).
- Examine the impact of **DSM-5 diagnostic criteria changes** and the **COVID-19 pandemic** on the incident ADHD diagnoses.

Results

Table 1. ADHD Prevalence and Incidence over the study period

	Prevalence	Incidence
Population	3,655,001	2,743,914
Total cases	232,480 (6.4%)	185,138 (675/10,000)
Male	142,267 (7.7%)	110,874 (805/10,000)
3-5	9,823 (1.7%)	9,436 (167/10,000)
6-12	76,895 (10.2%)	58,188 (885/10,000)
13-17	58,442 (7.8%)	17,429 (296/10,000)
18-29	58,821 (4.4%)	25,821 (286/10,000)
Female	90,213 (5.0%)	74,264 (543/10,000)
3-5	2,798 (0.5%)	2,683 (50/10,000)
6-12	28,917 (4.1%)	23,665 (372/10,000)
13-17	30,336 (4.3%)	16,026 (269/10,000)
18-29	53,351 (4.1%)	31,890 (341/10,000)

Conclusions

- Rising ADHD Diagnoses:** Prevalence and incidence of ADHD diagnoses increased across all age and sex groups in BC from 2003 to 2023.
- Impact of DSM-5:** Accelerated ADHD diagnoses, particularly in school-aged children and adolescents.
- Post-COVID Surge:** Incident ADHD diagnoses spiked in adolescent girls and young women, surpassing same-aged males and shifting the peak age of female diagnoses to high school years.
- School Entry & Exit Patterns:** ADHD Diagnoses among males increased at elementary school entry and declined after high school completion, raising concerns about potential over-identification.

Figure 1. Trends of ADHD Period Prevalence (%)

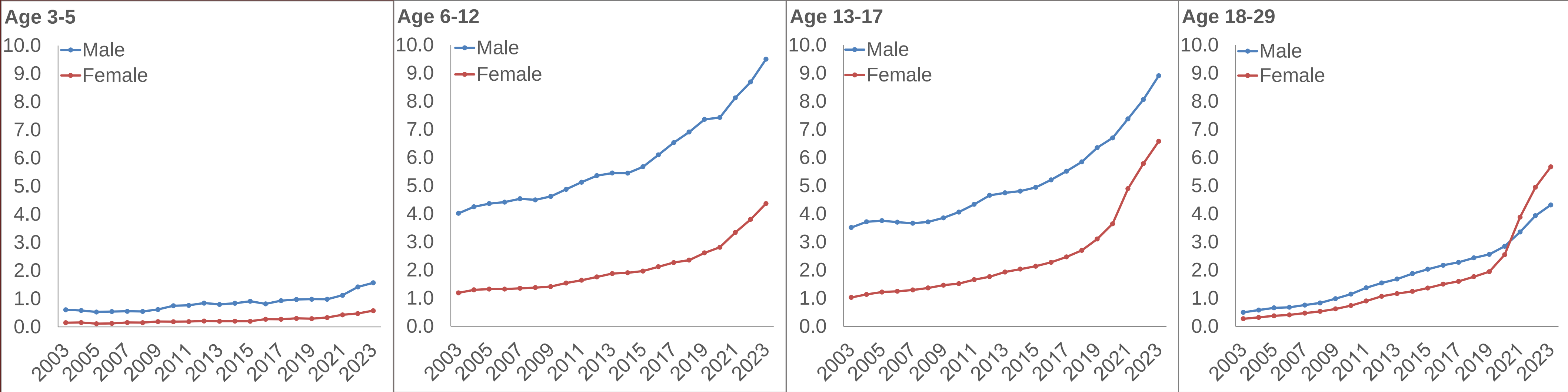
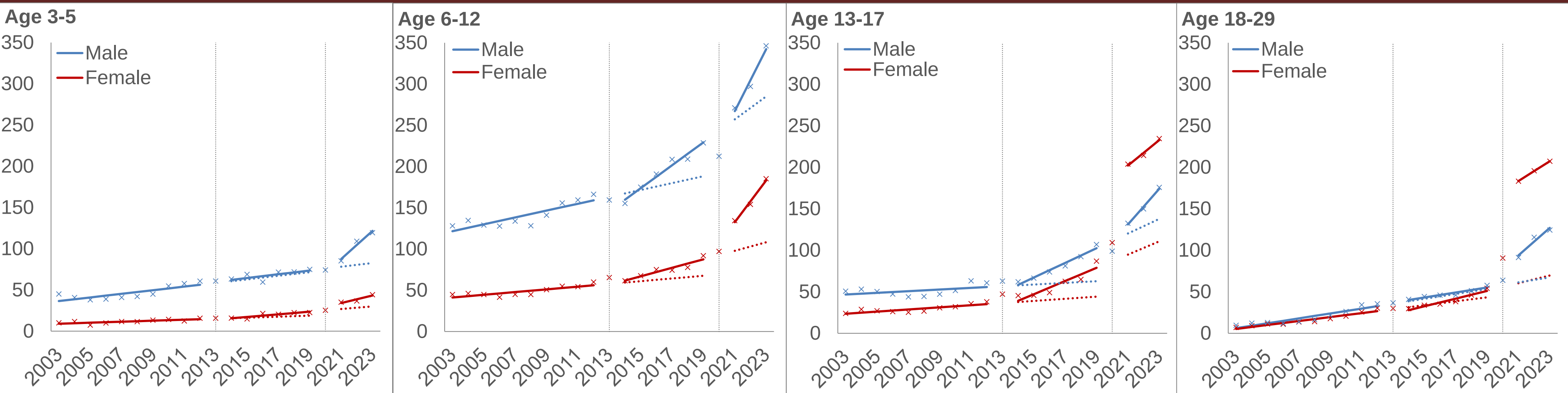


Figure 2. Trends of ADHD Incidence (/10,000)



Reference

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Declarations

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