(531) Sex Differences in the Nationwide Incidence of Neurodevelopmental Disorders Among Children in Taiwan

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Background & Objective

- Neurodevelopmental disorders (NDDs) are associated with poor mental health and social functioning, however, epidemiological data from Asian populations remain limited.
- This study aimed to estimate sex-specific incidence rates of NDDs in Taiwan.

Methods

Study Design and Data Source

- A nationwide retrospective, population-based study was conducted using the National Birth Certificate Application Database, Maternal and Child Health Database and the Taiwan's National Health Insurance database (2004–2021)

Participants

- Singleton live births to mothers between January 1, 2004, and December 31, 2015. Follow-up continued until December 31, 2021, to ensure a minimum of 6 years of follow-up.
- Children were followed for up to 18 years to identify NDDs based on diagnostic codes validated in a claims database.

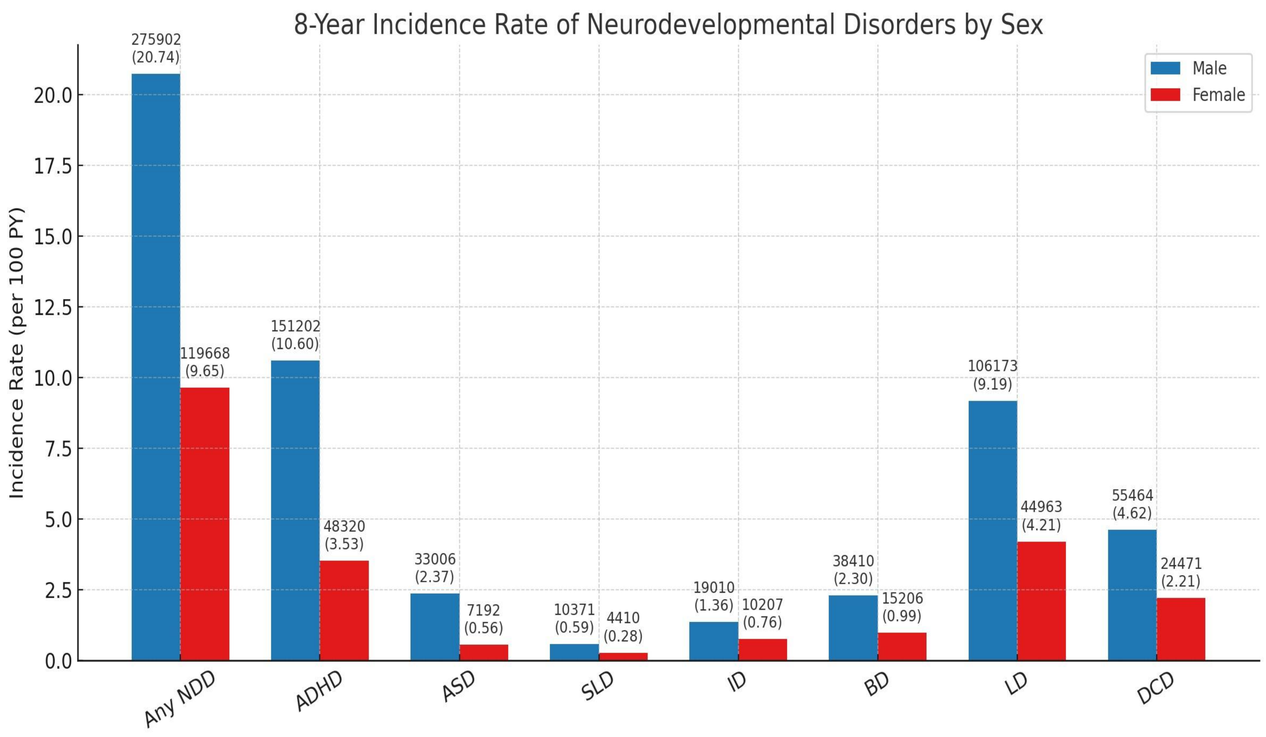
Statistical Analysis

- Overall and sex-stratified 8-year cumulative incidence rates of any NDD were estimated.
- Subgroup analyses were also performed by diagnostic category, including autism spectrum disorders (ASD), attention-deficit/hyperactivity disorder (ADHD), learning disabilities (LD), speech or language disorders (SLD), developmental coordination disorders (DCD), intellectual disabilities (ID), and behavioral disorders (BD).

Results

- A total of 2,218,204 singleton live births were identified in the study. The overall incidence rate of any NDD was 16.59 per 1,000 person-years (PY) throughout the follow-up period, with a median follow-up duration of 10.63 years (IQR: 7.35–14.41).
- Males exhibited a higher incidence rate than females (23.04 vs. 10.90 per 1,000 PY). By 8 years of age, the cumulative incidence was 15.43%, with ADHD (7.20%), LD (6.80%), and DCD (3.47%) being the most common diagnoses.
- The 8-year cumulative incidence of any NDD was higher in males compared with females (20.74% vs. 9.65%), and the sex-specific disparity was consistently observed across all NDD subtypes.**(Figure 1)**

Figure 1. 8-year Incidence Rate of Neurodevelopmental Disorders by Sex



ASD: autism spectrum disorders; ADHD: attention-deficit/hyperactivity disorder; LD: learning disabilities; SLD: speech or language disorders; DCD: developmental coordination disorders; ID: intellectual disabilities; BD: behavioral disorders

Conclusions

These findings highlight a sex disparity in the incidence of NDD among children. Future research is warranted to investigate sex-specific factors that may contribute to the development of NDDs.

Conflict of Interest : All authors declared having no conflicts of interest that are directly relevant to the content of this study. **Contact Information:** Fei-Yuan Hsiao/ Address: Room 220, 33, Linsen S. Rd, Taipei 10050, Taiwan/ Phone: 886-2-33668788/ E-mail: fyshsiao@ntu.edu.tw