

HEALTH & FITNESS

Age distorts ADHD diagnoses in kindergartners, studies say



Children look at picture books at a kindergarten in Berlin. John MacDougall/AFP/Getty Images

Research suggests immaturity is confused with disorder – and many children could be misdiagnosed

Tralee Pearce

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The youngest children in a kindergarten class are much more likely to be diagnosed with attention-deficit-hyperactivity disorder than their oldest peers, according to two U.S. research studies. The discrepancy would account for about a million misdiagnoses in the United States.

Because all children who turn five within a given 12-month period – starting in September or December in much of North America – attend kindergarten together, ages can vary by up to a year in any class.

Using longitudinal data of about 12,000 children, the study found that the youngest children in kindergarten are 60 per cent more likely to be diagnosed with ADHD than their older peers.

And researchers believe many of the characteristics flagged as signs of ADHD by kindergarten teachers – inattention, hyperactivity and impulsivity – might simply be due to immaturity relative to members of the cohort who are 11 months or more older.

“A five-year-old might not be more poorly behaved than the average five-year-old,” said Todd Elder, an economist and the lead author of a University of Michigan study. “But he’s much more poorly behaved than the average six-year-old. There’s a big difference.”

In Michigan, where the cut-off date is Dec. 1, students born on Dec. 1 had much higher rates of ADHD than those born on Dec 2. The former were the youngest in their grade and the latter were the oldest in their grade.

August-born kindergartners in Illinois were much more likely to be diagnosed with the disorder than Michigan kindergartners born in August of the same year. Dr. Elder said that’s because Illinois’ cut-off date is Sept. 1, so those August-born children were the youngest in their grade, while the Michigan students were not.

And those younger kids with diagnoses of ADHD were twice as likely as their older counterparts to be using prescribed stimulants in the 5th and 8th grades.

In a University of Carolina study, lead author Melinda Morrill, an economist, found that children born just after cut-off dates – i.e. the oldest in their classes – were 25 per cent less likely to be diagnosed with ADHD than the children born even a few days earlier, but before the cut-off dates. Both studies are in a forthcoming issue of the Journal of Health Economics.

While it is possible that the older children in the studies are being under-diagnosed, or that going to school early causes ADHD, both researchers say it is more likely that the younger children are being over-diagnosed.

Building on other evidence that the youngest kindergarten children in a cohort are at a disadvantage academically – not to mention athletically, as research by Malcolm Gladwell about Canadian national hockey-team players tending to be the oldest of their cohorts found – the findings may bolster the growing North-America-wide trend of holding younger children back a year. The term “red-shirting,” is being widely used, after the college football practice in which a team member does not play for a year but keeps his eligibility.

Manitoba parenting blogger Angela Zwaagstra (Fourlittlezs.com) recently wrote about her decision not to red-shirt one of her sons for kindergarten, although he will be among the youngest. She said fellow parents were surprised at her choice, indicating times have changed.

“Years ago, holding back a child was not considered an advantage. To stay home an extra year was akin to ‘failing’ kindergarten, and children who had this done to them were generally considered slow: a little bigger and little dumber than the rest,” she wrote.

This phenomenon could disproportionately affect economically disadvantaged families, too, Dr. Elder said.

“Kindergarten is free, whereas an additional year of daycare is not,” he said. “The kids being held out of school are the ones whose parents can afford it. Those kids already have some advantages. So this entrance-age policy might exacerbate some of these socio-economic differences.”

In addition to underlining the potentially harmful long-term consequences of misdiagnosis and drug therapy, the studies’ findings point to a potential area of overspending in the U.S. health-care system. Dr. Elder said that about \$320-million to \$500-million is being spent on unnecessary medication, \$80-to-\$90 million of that paid by Medicaid.

At the very least, Dr. Elder said, this work could be a step in alerting parents and teachers about start-date effects.

“If we’re going to keep this cut-off policy then it’s important that in trying to figure out who has behavioural disorders like ADHD we should compare children to others of their same age not to others in their own grade.”

Marshall Korenblum, the chief psychiatrist at the Hincks-Dellcrest Centre for Children and Families in Toronto, said that while the studies can be interpreted in several ways, including the possibility that children in Dr. Elder’s study who were still on ADHD drugs after kindergarten were properly diagnosed, there are interesting implications for Canadians. The rates of ADHD are similar in the United States and Canada, he said, and the findings are “odd.” In Canada, about 450,000 children under 18 have been diagnosed with ADHD, about 10 per cent of the U.S. total.

Because a finding of ADHD involves teacher questionnaires, it may be useful to look at teachers’ role in starting the trajectory toward a diagnosis, he said.

“It may mean teachers need more education about what is developmentally normal and what is not,” he said. “Maybe these kindergarten teachers have a lower tolerance for so-called misbehaviour in younger kids.”