

NEWS

Autism prevalence estimates for China, Greece align with global patterns

BY PETER HESS

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About 0.7 percent of children in China aged 6 to 12 have autism, suggests the largest study of the country's autism prevalence to date¹. And in Greece, 1.15 percent of 10- and 11-year-olds have the condition, according to the first estimate for that country².

Both figures fall within the range of autism prevalence estimates reported for children in **other nations**. The studies also show that autism is about four times as common in boys as it is in girls in both countries, a ratio **in line with studies** of children in the United States and elsewhere.

A 2019 study of 45,036 children in three Chinese cities came up with a slightly higher estimate of **about 1 percent**. But the new work includes almost three times as many children, from eight cities, and may better represent China's population, the researchers say. It also provides the first data on the prevalence of co-occurring conditions, such as **attention deficit hyperactivity disorder**, phobia or **obsessive-compulsive disorder**.

"It's a very strong starting point, and it's a step up for China compared to what was there before," says **Eric Fombonne**, professor of psychiatry at Oregon Health and Science University, who helped design the study, a collaboration among researchers across five provinces and three municipalities — groups that often compete for government research funding. "These epidemiological studies are behemoths, very difficult to do."

Still, the new studies may underestimate the actual number of children with autism in China and Greece.

Autism prevalence research in both countries is in early stages compared with prevalence research in other countries, says **Mayada Elsabbagh**, assistant professor of neurology and neurosurgery at McGill University in Montreal, Canada, who was not involved in either study. Instead of true prevalence, the new estimates in China and Greece likely reflect levels of community awareness,

the quality of services and the availability of diagnostic tools, she says.

Identifying children:

Fombonne and his colleagues used government records to identify 125,806 eligible children ages 6 to 12 living in eight Chinese cities, chosen as a representative sample of the country. To screen the children for autism, the team distributed a questionnaire they had developed, called the Modified Chinese Autism Spectrum Rating Scale (MC-ASRS), to parents and teachers.

The MC-ASRS screen flagged 37,500 children. After group interviews with the children, the team offered diagnostic evaluations to 1,135 of them; about 20 percent of the children's families declined. The team also evaluated children attending special education schools, who they assumed were more likely to be autistic.

Of the 1,079 of children evaluated for autism, 363 met criteria for the condition. Forty-three percent of the children had not been previously diagnosed, and more than 90 percent of these children attended mainstream schools. By assuming that the prevalence numbers for children from nonresponsive families would be roughly the same as those for the rest of the participants, the researchers estimated an overall prevalence of 1 in 143.

This figure falls on the lower end of the range reported for other countries, suggesting that more children remain to be identified in the region, Elsabbagh says. "It's nevertheless a very useful tool to get kind of a screenshot of the current situation of autism in China, and certainly a useful estimate in terms of informing policy and services."

The study shows that 69 percent of autistic children in China have at least one co-occurring neuropsychiatric condition, the most common of which is attention deficit hyperactivity disorder, identified in 43 percent of them. Medical records for about 30 percent of the children showed that the most common co-occurring physical conditions are **gastrointestinal problems**, **sleep disorders**, allergies and **seizure disorders**.

The inclusion of data on co-occurring conditions is a welcome contribution of the study, Elsabbagh says. "Here the picture is somewhat consistent with some of the reports we get from other countries."

Early steps:

The Greek study, the first large-scale autism prevalence study in that country, relied on education records to determine the autism status of 182,879 children. It shows a prevalence of about 1 in 87.

The approach appears to achieve good coverage of the country's 10- and 11-year-olds, yielding results that line up closely with other autism prevalence estimates, Elsabbagh says. But, she adds,

“one could argue the use of data that doesn’t involve doing direct assessments is problematic.”

The numbers would likely be more reliable if researchers had done follow-up clinical interviews with children, Fombonne says. Unlike the Chinese study, the Greek study does not include data on co-occurring conditions, but the researchers present a fair and accurate picture of the limitations of their findings, he says.

Spectrum could not reach the researchers behind the Greek study for comment.

REFERENCES:

1. Zhou H. *et al. Neurosci. Bull.* Epub ahead of print (2020) [PubMed](#)
2. Thomaidis L. *et al. J. Clin. Med.* **9**, E2163 (2020) [PubMed](#)