

Students

Edited by Eve Bender

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TOPLINE:

Posttraumatic stress disorder (PTSD) rates among college students more than doubled between 2017 and 2022, new data showed. Rates of acute stress disorder (ASD) also increased during that time.

METHODOLOGY:

- Researchers conducted five waves of cross-sectional study from 2017 to 2022, involving 392,377 participants across 332 colleges and universities.
- The study utilized the Healthy Minds Study data, ensuring representativeness by applying sample weights based on institutional demographics.
- Outcome variables were diagnoses of PTSD and ASD, confirmed by healthcare practitioners, with statistical analysis assessing change in odds of estimated prevalence during 2017-2022.

TAKEAWAY:

- The prevalence of PTSD among US college students increased from 3.4% in 2017-2018 to 7.5% in 2021-2022.
- ASD diagnoses also rose from 0.2% in 2017-2018 to 0.7% in 2021-2022, with both increases remaining statistically significant

settings.

IN PRACTICE:

"These trends highlight the escalating mental health challenges among college students, which is consistent with recent research reporting a surge in psychiatric diagnoses," the authors wrote. "Factors contributing to this rise may include pandemic-related stressors (eg, loss of loved ones) and the effect of traumatic events (eg, campus shootings and racial trauma)," they added.

SOURCE:

The study was led by Yusen Zhai, PhD, University of Alabama at Birmingham, Alabama. It was [published online](#) on May 30, 2024, in *JAMA Network Open*.

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LIMITATIONS:

The study's reliance on self-reported data and single questions for diagnosed PTSD and ASD may have limited the accuracy of the findings. The retrospective design and the absence of longitudinal follow-up may have restricted the ability to infer causality from the observed trends.

DISCLOSURES:

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Early-Life Exposure to Pollution Linked to Psychosis, Anxiety, Depression

Eve Bender

Early-life exposure to air and noise pollution is associated with a higher risk for psychosis, [depression](#), and anxiety in adolescence and early adulthood, results from a longitudinal birth cohort study showed.

While air pollution was associated primarily with psychotic experiences and depression, noise pollution was more likely to be associated with anxiety in adolescence and early adulthood.

"Early-life exposure could be detrimental to mental health given the extensive brain development and epigenetic processes that occur in utero and during infancy," the researchers, led by Joanne Newbury, PhD, of Bristol Medical School, University of Bristol, in Bristol, England, wrote, adding that "the results of this cohort study provide novel evidence that early-life exposure to particulate matter is prospectively associated with the development of psychotic experiences and depression in youth."

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The findings were [published online](#) on May 28 in *JAMA Network Open*.

Large, Longitudinal Study

To learn more about how air and noise pollution may affect the brain from an early age, the investigators used data from the Avon Longitudinal Study of Parents and Children, an ongoing longitudinal birth cohort capturing data on new births in Southwest England from 1991 to 1992.

airborne and inhaled particulate matter with a diameter smaller than 2.5 μm ($\text{PM}_{2.5}$), in the areas where expectant mothers lived and where their children lived until age 12.

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They also collected decibel levels of noise pollution in neighborhoods where expectant mothers and their children lived.

Participants were assessed for psychotic experiences, depression, and anxiety when they were 13, 18, and 24 years old.

Among the 9065 participants who had mental health data, 20% reported psychotic experiences, 11% reported depression, and 10% reported anxiety. About 60% of the participants had a family history of mental illness.

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When they were age 13, 13.6% of participants reported psychotic experiences; 9.2% reported them at age 18, and 12.6% at age 24.

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A lower number of participants reported feeling depressed and anxious at 13 years (5.6% for depression and 3.6% for anxiety) and 18 years (7.9% for depression and 5.7% for anxiety).

After adjusting for individual and family-level variables, including family psychiatric history, maternal social class, and neighborhood deprivation, elevated $\text{PM}_{2.5}$ levels during pregnancy ($P = .002$) and childhood ($P = .04$) were associated with a significantly increased risk for psychotic experiences later in life. Pregnancy $\text{PM}_{2.5}$ exposure was also associated with depression ($P = .01$).

Participants exposed to higher noise pollution in childhood and adolescence had an increased risk for anxiety ($P = .03$) as teenagers.

understand the underlying mechanisms behind these associations but noted that early-life exposure could be detrimental to mental health given "extensive brain development and epigenetic processes that occur in utero."

They also noted that air pollution could lead to restricted fetal growth and [premature birth](#), both of which are risk factors for psychopathology.

Martin Clift, PhD, of Swansea University in Swansea, Wales, who was not involved in the study, said that the paper highlights the need for more consideration of health consequences related to these exposures.

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"As noted by the authors, this is an area that has received a lot of recent attention, yet there remains a large void of knowledge," Clift said in a UK Science Media Centre release. "It highlights that some of the most dominant air pollutants can impact different mental health diagnoses, but that time-of-life is particularly important as to how each individual air pollutant may impact this diagnosis."

Study limitations included limitations to generalizability of the data — the families in the study were more affluent and less diverse than the UK population overall.

The study was funded by the UK Medical Research Council, Wellcome Trust, and University of Bristol. Disclosures were noted in the original article.

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Raising Alarm Among Some Doctors

Jake Remaly

BOSTON — Clinicians at internal medicine and endocrinology meetings recently presented case reports describing pancreatitis in patients taking tirzepatide. In one case, a 64-year-old patient died.

Clinicians and patients should be aware of this complication, especially as more patients take this type of antidiabetic and weight loss medication, researchers said.

Krista Grennan, MD, a resident with Mayo Clinic in Jacksonville, Florida, and colleagues [described the fatal complication](#) in a poster presented at the American Association of Clinical Endocrinology meeting in May.

"While tirzepatide has known significant weight loss benefits, physicians should be aware of the rare but potentially fatal side effects before initiating treatment," they wrote. "A case-by-case risk benefit analysis should be performed for each patient."

The 64-year-old patient arrived at the emergency department with sudden epigastric pain. She had recently started tirzepatide for weight loss and had taken her last dose 4 days prior, according to Grennan and coauthors. A CT scan showed acute pancreatitis and possible necrosis.

The next day, another CT scan showed severe necrotizing pancreatitis and hypoperfusion of several organs. The patient developed acute hypoxic respiratory failure and required intubation.

The patient's condition worsened on day 3. Clinicians initiated a stroke protocol after the patient developed asymmetric pupils. The

observed in clinical trials and warns, "Discontinue promptly if pancreatitis is suspected. Do not restart if pancreatitis is confirmed."

Grennan and colleagues said that the alert should be further emphasized in a black [box warning](#).

However, Sonal Singh, MD, MPH, associate professor at UMass Chan Medical School in Worcester, Massachusetts, said another cause of pancreatitis in the patient may have been the cause. Still, clinicians should inform patients about signs of the condition such as nausea, vomiting, abdominal pain, and fever, said Singh, who was not involved in the new case presentations but [has studied the risk for pancreatitis with other glucagon-like peptide 1 \(GLP-1\)-based therapies](#).

"Consider holding these drugs when such symptoms and signs emerge," he said.

The label for tirzepatide notes that after starting treatment, clinicians should "observe patients carefully for signs and symptoms of pancreatitis (including persistent severe abdominal pain, sometimes radiating to the back, which may or may not be accompanied by vomiting)."

A Low Threshold to Stop

At the [Society of General Internal Medicine \(SGIM\) 2024 Annual Meeting](#) in May, Mohammed Abdelsalam, MD, a resident at Texas Tech University Health Sciences Center in Amarillo, Texas, presented a case of necrotizing pancreatitis and cholecystitis in a 25-year-old woman taking tirzepatide for weight loss. In this case, the patient had a good prognosis, he said.

The patient had "intermittent episodes of severe epigastric pain radiating to the back and right upper quadrant abdominal pain along with nausea and vomiting for few days," Abdelsalam said. The patient

peripancreatic stranding and fluid, the patient received IV fluids and antibiotics, and a cholecystectomy was ordered.

"Healthcare providers should be aware that cholelithiasis, cholecystitis, and pancreatitis are rare adverse effects (0.2%) that can occur with GLP-1" receptor agonist agents, including tirzepatide, Abdelsalam told *Medscape Medical News*. "The incidence of these conditions is expected to rise with the increased prescriptions of these agents."

Higher doses, treatment for more than 26 weeks, and rapid weight loss may be risk factors. A history of pancreatitis, hypertriglyceridemia, cholelithiasis, and alcohol use also may heighten the risk, he said.

"There should be a low threshold for stopping tirzepatide if pancreatitis is suspected," Abdelsalam said.

Case reports can add to clinicians' understanding of adverse events but "need to be synthesized and seen in light of other reports and studies," Singh told *Medscape Medical News*.

For instance, at Digestive Disease Week, researchers presented a new analysis of data from a real-world healthcare database that found that the link between GLP-1 drugs and pancreatitis [might be attenuated](#) after accounting for patients' initial body mass index.

The study — which did not include tirzepatide as part of the analysis — was framed as a counterpoint to [another study](#) that found that GLP-1 agonists increased the risk for pancreatitis.

Singh said he sees the findings from both studies as consistent in showing an increased risk, with any differences in the results likely reflecting the different data sources, study designs, and populations.

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Pneumococcal Risk Sixfold

Becky McCall

BARCELONA, SPAIN — *Streptococcus pneumoniae*, the bacteria that causes pneumococcal disease, is sixfold more likely to colonize adults older than 60 years who have regular contact with children than those who do not, [data from a community-based study](#) showed.

However, there is "no clear evidence of adult-to-adult transmission," and the researchers, led by Anne Wyllie, PhD, from the Yale School of Public Health, New Haven, Connecticut, noted that the study results suggest "the main benefit of adult pneumococcal conjugate vaccine (PCV) immunization is to directly protect adults who are exposed to children, who still carry and transmit some vaccine-type pneumococci despite successful pediatric national immunization programs."

The data show that relatively high pneumococcus carriage rates are seen in people who have regular contact with children, who have had contact in the previous 2 weeks, and who have had contact for extended periods, Wyllie explained.

Preschoolers in particular were found to be most likely to transmit pneumococcus to older adults. "It is the 24- to 59-month-olds who are most associated with pneumococcal carriage, more than 1- to 2-year-olds," she reported. However, transmission rates from children younger than 1 year are higher than those from children aged 1-2 years, she added.

The findings were presented at the [European Society of Clinical Microbiology and Infectious Diseases \(ESCMID\) 2024](#) global conference, formerly known as the ECCMID conference.

Originally Designed to Investigate Adult-to-Adult Transmission

Although "we designed the study to specifically look at transmission between adults, in the end, we were presented with a very unique scenario" — restricted social mixing as a result of the COVID pandemic — during which "no community activities were happening," Wyllie said. Because of this, the team was able to determine "the source of acquisition or transmission to the older adults was, very likely, coming from contact with children."

Pneumococci are commonly found in respiratory tracts of healthy people. The US Centers for Disease Control and Prevention estimated that [20%-60% of school-aged children](#) may be colonized compared with only 5%-10% of adults without children.

The longitudinal study was conducted among household pairs, such as married couples who were both aged at least 60 years and who did not have people younger than 60 years living in the household, in New Haven over two winter seasons: 2020-2021 and 2021-2022.

Self-collected saliva samples were assessed, and surveys on social behaviors and health were completed every 2 weeks for a 10-week period (with six study visits). The saliva sampling method was used because the researchers considered it to be more effective than samples from nasopharyngeal swabs. Quantitative polymerase chain reaction assays were used to test the saliva samples for the presence of pneumococcal DNA (pneumococcus genes *piaB* and *lytA*) and the diversity of pneumococcal strains (36 serotypes were targeted).

Strongly Suggestive of Transmission From Kids to Older Adults

Of the 121 adults living in 61 households who were enrolled in the study, 62 adults participated in both seasons. Mean age was 70.9 years (range, 60-86 years), 51% of participants were women, and 85% were White.

the two participants who were colonized at five of six timepoints, one reported daily contact with children younger than 5 years and children aged 5-9 years in the two study seasons. This person was also positive at three of six sampling points during the first study season.

There were five instances in which both members of the household were carriers in the same season, although not necessarily at the same timepoint. Numbers were too small to determine whether transmission had occurred between the household pairs.

Contact with a 24- to 59-month-old child (older than 2 years but younger than 5 years) had the strongest association with elevated odds of carrying pneumococcus, the authors reported in their [preprint](#), although the frequency and intensity of contact also mattered.

At any sampled time (point prevalence), pneumococcal carriage was substantially — just over sixfold — higher among older adults who had contact with children daily or every few days (10%) than among those who had no contact with children (1.6%).

In particular, contact between adults and children younger than 5 years and children aged 5-9 years was found to lead to elevated point prevalences of 13.8% and 14.1%, respectively. Pneumococcal carriage in children older than 10 years was lower, with a point prevalence of 8.3%.

The younger the child, the greater the point prevalence; point prevalences were 13.8% for samples from children aged 1 year and younger, 10.5% for samples from children aged 1-2 years, and 17.8% for children aged 2-5 years.

Carriage prevalence was higher in older adults who reported daily contact with children (15.7%) or contact every few days (14.0%) than in those who reported contact with children only once or twice a month (4.5%) or never (1.8%), they wrote.

pointed out.

However, adult PCV immunization may not have a major impact on onward transmission to other adults, the authors wrote in their preprint.

This study supports prior work demonstrating that pneumococcal colonization is greater in households with children than in those without, said Stephen Pelton, MD, a pediatric infectious disease specialist from Boston University Schools of Medicine and Public Health, Boston. "The unique aspect is that Dr Wyllie's group has looked at individuals over age 60 and used the most sensitive methods currently available to detect pneumococcal carriage."

"At the most recent ISPPD [International Society of Pneumonia and Pneumococcal Diseases conference], the role of adult-to-adult transmission in the community was discussed. This study confirms the critical role children play in community transmission of the pneumococcus," Pelton noted.

Wyllie received consulting and/or advisory board fees from Pfizer, Merck, Diasorin, PPS Health, Primary Health, Co-Diagnostics, and Global Diagnostic Systems for work unrelated to this project and is the principal investigator on research grants from Pfizer, Merck, NIH RADx-UP, and SalivaDirect, Inc. to Yale University and from NIH RADx, Balvi.io, and Shield T3 to SalivaDirect, Inc. Pelton received honoraria from Merck, Pfizer, Sanofi, and GSK for participation in Pneumococcal Advisory Boards and DSMB (Sanofi). Boston Medical Center received grant funding for investigator-initiated research from Merck and Pfizer.

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