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Psychology

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Winner of the Grand Award

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The Hot List

Resources, opportunities, and news
for psychologists from APA



CHATBOTS

Guidance for Navigating AI-Generated Advice

According to a recent APA survey, more than three quarters of psychologists report that their patients are discussing AI in therapy. People are using chatbots to self-diagnose, assist with treatment, or handle friendships and intimate relationships. APA remains committed to safety: AI is not a safe or effective substitute for a qualified mental health provider. APA's new *Guide to Navigating AI-Generated Advice Thoughtfully and Safely* offers recommendations on appropriate and inappropriate uses of AI to support mental health. Download the guide at www.apa.org/topics/artificial-intelligence-machine-learning/guide-navigating-ai.



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MAGINATION PRESS

Dance and Roar Like a Dinosaur

This new Magination Press book offers an engaging way to teach children self-regulation through a simple, dinosaur-inspired line dance. With a steady beat and playful rhythm, the activity supports social, emotional, and mental well-being. A follow-up to the relaxation-focused *Calm Your Roar Like a*

Dinosaur, this book focuses on boosting children's energy, motivation, and attention. Find this title and more for kids at www.apa.org/pubs/magination.

E-BOOKLET

Smart Networking for Psychologists

Looking to build or expand your professional network? *Smart Networking for Psychologists* gives you the tools to jump-start a clear, effective networking strategy that will feel authentic. Learn how to tap your connections to uncover hidden job opportunities and use AI to surface previously unknown connections. It also offers a step-by-step checklist for building long-lasting professional relationships. Get your free copy at pages.apa.org/networking.

DATA INSIGHTS

Degrees in Psychology

In 2024, about 15,000 psychology master's degrees and 3,500 doctorate degrees were awarded in research fields. Explore APA's Degrees in Psychology data tool to see trends in degrees awarded from 2010 to 2024, including degree level, field of degree, state counts, institutional characteristics, and more. Find the tool at www.apa.org/workforce/data-tools/degrees-psychology.

PICK THE NEXT PRESIDENT

Vote in APA's Election

APA's election runs from Aug. 3 to Sept. 16. The winning psychologist will serve as APA's 2027 president-elect and 2028 president. Find additional information on the candidates on the President-Elect Ballot at my.apa.org.

ACCOLADES

Monitor Wins Apex Award

The *Monitor on Psychology* has won its second consecutive APEX Grand Award for Publishing, the program's top honor, recognizing the annual Trends issue. Judges praised the January/February Trends package as "genuine forecasting" and called the issue "strong publishing"—a win that puts the *Monitor* amongst top-tier industry publications. Read (or reread) the Trends issue at www.apa.org/monitor/browse.



FOR EDUCATORS

Undergraduate Resource Guide

As psychology programs seek to better prepare students for diverse careers, APA's undergraduate resource guide, *Explore the Wide Range of Psychological Science Careers*, can help. Faculty can use the guide to help students connect their academic training to meaningful psychological science careers across academia, business and industry, nonprofit organizations, and government. Find this free resource at www.apa.org/science/programs/becoming-psychological-scientist.



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September 2026



36 The Many Pathways of Empty Nesting

When adult children leave home, parents often experience a sense of grief and identity loss. Research shows that this period, with newfound freedom to pursue goals and passions, can lead to greater well-being.



44 The Hidden Cost of Workplace Rustout

With a significant share of the workforce at every age and career stage reporting low engagement, psychologists are well positioned to help individuals, managers, and organizations recognize and address rustout before it quietly erodes health and productivity.



28 What AI Is Doing to Young Brains *(cover)*

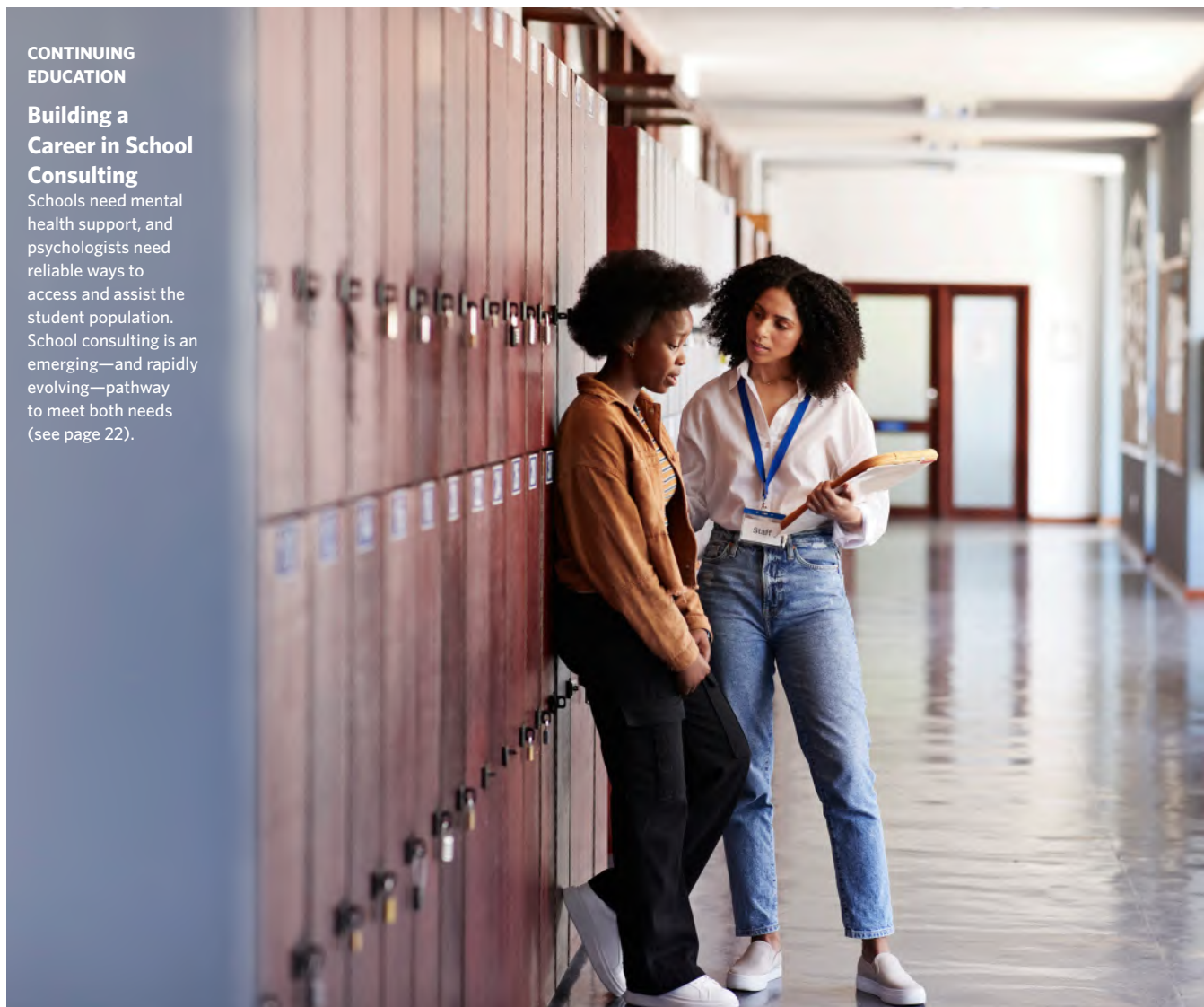
Psychologists are starting to research how AI is affecting children, including how AI tools can support learning rather than hinder it; what happens when children start to see chatbots as friends; and how to teach AI literacy skills so younger generations can learn when it's safe or advisable to ask AI for help.

ON THE COVER: TANG MING TUNG/GETTY IMAGES

CONTINUING EDUCATION

Building a Career in School Consulting

Schools need mental health support, and psychologists need reliable ways to access and assist the student population. School consulting is an emerging—and rapidly evolving—pathway to meet both needs (see page 22).



@APA

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On Renewal

September invites psychologists to reset with intention after a demanding year

BY WENDI WILLIAMS, PhD



Dr. Wendi Williams is the 2026 APA president and principal consultant at WSW Consulting Services, where she advances equity-driven leadership through psychology-informed consultation rooted in Black Women's Liberatory Leadership Praxis.

THE ACADEMIC year turns in the fall. For those of us shaped by the rhythms of the semester, September has always been less an ending than a beginning, the season we return, reset, and begin again.

Some of us are arriving at this one tired. It has been a demanding year, politically and economically, and the strain has reached into our clinics, our classrooms, our labs, and our own households. Many of us have spent the year pouring out—for our clients, our students, our communities—with too little poured back in. As psychologists, we know the costs of sustained depletion.

This season, I offer an invitation to replenish. Not as indulgence but as the precondition for the work we carry. In a year that has asked so much of us, the effort to restore ourselves may come closer to resembling a radical act. To insist on our own restoration is to refuse the false bargain that says devotion must be proven by depletion.

“Leadership” is the word I want to leave you with. We lead as educators, as scientists, as clinicians, as advocates, and in each of those rooms, others are watching how we carry ourselves under pressure. When we tend to our own well, we model something our trainees and colleagues cannot learn from a syllabus: that this work

is sustainable, that it can be done with steadiness and even joy, that we need not burn ourselves down to prove our worth.

This fall, I ask you to reset with intention. Return to why you entered this field. Let us renew that sense of purpose by choosing, together, to replenish what it took from us and find grounding in the wisdom we now carry.

bell hooks reminds us, “Rarely, if ever, are any of us healed in isolation. Healing is an act of communion.”

Our renewal was never meant to be a solitary project. We restore one another by how we show up, how we make room, how we lead. The society we serve needs psychologists who are not merely capable but also whole. Let us begin there, together.

Be well—Radically Well, Together! ■

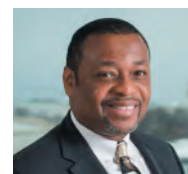
When we pursue replenishment and renewal, we support ourselves and our colleagues.



Psychology's Moment in Brain Health

From the brain economy to AI, our field increasingly has a reserved seat at the table

BY ARTHUR C. EVANS JR., PhD



Arthur C. Evans Jr., PhD, is the chief executive officer of APA. You can follow him on LinkedIn. [in](#)

WHEN I ATTENDED the Texas Brain Economy Summit in Houston this summer, something notable happened. A few years ago, when psychology showed up at brain health convenings like this, others wondered: Why is APA here? This time, nobody asked that question. We were seen as essential to the conversation—and that shift matters.

So, what has changed? To start, the “brain economy” frame has gained remarkable traction in a short amount of time. At its core, this framework recognizes that cognitive capacity, mental health, and behavioral well-being are foundational infrastructure for human productivity and resilience. When policy-makers, health system leaders, and philanthropists gather to discuss large-scale brain research initiatives, they are talking not just about treating illness but also about what it takes for people—and economies—to function and flourish. Psychology has always had something powerful to offer that conversation, and the brain economy framing makes that visible.

Another reason that psychology is now in the room: AI.

During my panel on the future of brain health and AI, I offered that we are living through the biggest experiment on the human brain in history.

By the end of the day, I had heard it repeated back to me by multiple attendees.

The people building these technologies, no matter how talented, do not have the expertise to understand and apply behavioral science. We do. And that expertise is urgently needed to protect people from potential harms and to capitalize on opportunities to extend mental health support, improve outcomes, and strengthen the brain economy from the ground up.

The question before us: Will our field rise to the moment? This means

bringing psychological science to bear on the issues that will define brain health in the coming decades—from understanding AI’s effects on cognitive aging to addressing disparities affecting underserved and vulnerable populations. It also means ensuring that the design and deployment of these technologies reflect what we uniquely know about human behavior and well-being.

What happens next in brain health and AI will shape our field for generations. Psychology must be at the forefront—not to watch this movement unfold but to help lead it. ■

Dr. Evans speaking at one of the panel discussions at the Texas Brain Economy Summit in Houston this summer



In Brief

COMPILED BY ANNA MIKULAK, PhD

Beliefs and intentions link self-control with healthy behaviors

Many studies have found that people with high levels of self-control tend to engage in behaviors that support health and avoid behaviors that harm health. Although the underlying processes that link self-control to health behaviors are less clear, research in *Health Psychology* suggests that our beliefs, perceived control, and intentions may play an important role. Researchers performed a meta-analysis of 174 studies that reported associations among self-control (as a personality characteristic), social cognition, intention, and behaviors associated with health protection and health risk,

including diet, physical activity, and alcohol consumption. As expected, high self-control was linked with health-promoting behavior across studies. This link was explained, at least in part, by participants' beliefs about the value of a particular health behavior, their ability to perform this behavior, and their intention to do so. Although the findings do not provide evidence for causation, the researchers suggest future studies could examine attitudes and perceived control as possible mechanisms for improving health.

DOI: 10.1037/hea0001588

People with strong self-control tend to eat well, exercise, and drink less—largely because of their beliefs, confidence, and intentions.



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📺 Watching sports may lead to broader 'win-lose' mentality

Watching sports has been shown to have some social upsides, but research in the *Journal of Personality and Social Psychology* suggests it may also have a cognitive downside: zero-sum thinking, or a general mindset that one person's success comes at the expense of another's. According to two online studies with 788 and 1,994 participants in the United States, people who were more engaged in sports were more likely to apply zero-sum thinking to topics such as the economy, conflict resolution, and immigration. These correlational findings were supported by two online experiments:

Participants who watched a competitive sports clip reported greater zero-sum beliefs and were more likely to adopt a win-lose mentality on a negotiation task than participants who watched an instructional sports clip. Additional data collected over the Indian Premier League cricket season indicated that participants' zero-sum beliefs fluctuated in line with their sports watching, peaking ahead of high-stakes games. Though the study didn't include the real-world consequences of this type of thinking, zero-sum thinking has been shown to get in the way of more collaborative and collective approaches to problem-solving.

DOI: 10.1037/pspi0000520

📺 Watching competitive sports may boost zero-sum thinking—the belief that one person's gain requires another's loss—research finds.



People with varied social resources tend to have better health outcomes

Social connections are known to boost health and healthy aging, but few studies have examined the additive impact of different types of social connections and resources. In a study published in *American Psychologist*, researchers examined cumulative social advantage as a construct encompassing social resources across various domains, including one's early parent-child relationship quality, religious and faith-based support, connection to local community, and extended support networks. Data from more than 6,614 participants in the Midlife Development in the United States (MIDUS) study indicated that people with higher levels of cumulative social advantage tended to have fewer health conditions, fewer challenges with daily living, and were less likely to die during the study period. The findings were consistent regardless of participants' sex, race, or level of education. Longitudinal studies can help clarify whether cumulative social advantage accrues across the life span, leading to better health outcomes over time.

DOI: 10.1037/amp0001513

Presentation order matters for learning new words

Sometimes we hear a new word before we see it written or vice versa; other times, we may hear and read a new word at the same time. Does the order of exposure matter for learning? To find out, researchers asked participants who had no familiarity with the Chinese language to study written and spoken forms of Chinese words. Two exploratory experiments indicated an advantage of hearing the word first: Participants were better at remembering how to write new words

when they encountered the spoken form before the written form in their training sessions. A third preregistered experiment suggested that the advantage of hearing a word first did not apply when participants were asked to simply recognize the correct written form rather than write it themselves. The findings, published in the *Journal of Experimental Psychology: General*, suggest that presentational timing may matter more for recall memory—writing out the correct word—than for recognition memory because recall is a more cognitively demanding task. According to the researchers, the findings could inform teaching approaches for language learners.

DOI: 10.1037/xge0001915

More 'foreign' job candidates may seem less hireable for some jobs

Racial and cultural stereotypes may affect how foreign someone is perceived to be, influencing whether they are seen as a good job candidate, according to research in the *Journal of Experimental Psychology: General*. In one online experiment, 1,039 White American participants read a job ad that included two stereotypically American characteristics: familiarity with American customs and strong English skills. They then evaluated three applicant résumés. Their evaluations indicated that applicants with stereotypically Asian American last names and stereotypically Latino American last names were seen as less hireable for the role than applicants with stereotypically Black American last names, which was partly explained by the fact that participants saw the Asian and Latino names as more culturally foreign. However, additional online experiments indicated that job context mattered: Participants

saw applicants with stereotypically Asian American last names as more hireable than other applicants of color when the job required technical skills in computer programming. Based on these findings, and an archival analysis of employment discrimination cases in the United States, the researchers conclude that stereotypes about foreignness may contribute to racial discrimination in job-related contexts.

DOI: 10.1037/xge0001902

Replication rates across social and behavioral sciences hover near 55%

The question of whether published research is replicable—whether independent efforts to repeat a study

produce similar findings—has gained considerable attention in recent years. In this large-scale study, researchers from many labs applied this question to the social and behavioral sciences, attempting to replicate 274 findings published in 54 journals across business, economics, education, political science, psychology, and sociology. The study, published in *Nature*, was conducted as part of the Defense Advanced Research Projects Agency (DARPA) Systematizing Confidence in Open Research and Evidence (SCORE) program. Overall, the replications yielded statistically significant results in line with the original research for 55.1% of the findings. The median effect size was markedly lower for the replication attempts than for



the original findings. Critically, 13 different methods for evaluating whether a replication attempt was successful provided different estimates. The researchers note that there is no single, objectively correct approach to determine whether a finding is replicable. Clarifying the factors and decisions that affect research reliability allows advancing the theory about research credibility and supporting the decision-making process for translating research insights into practice, they conclude.

DOI: 10.1038/s41586-025-10078-y

Brain imaging analyses suggest distinct ADHD subtypes

Children with attention-deficit/hyperactivity disorder (ADHD) tend to have certain clinical features in common, but they also show quite a bit of variability in their functioning

and symptoms. A study published in *JAMA Psychiatry* suggests this variability may reflect distinct subtypes of ADHD marked by differences in brain structure. Comparing structural brain imaging data from 446 children with ADHD and 708 children without ADHD, researchers found noticeable differences in brain network structure between the two groups. Importantly, the brain differences associated with ADHD tended to cluster with clinical symptoms according to one of three profiles, or biotypes. Two of these biotypes—“predominantly hyperactive/impulsive” and “predominantly inattentive”—aligned with common clinical profiles for ADHD. The third biotype, “combined,” indicated a more extreme clinical profile marked by severe symptoms and emotional dysregulation. Data from an independent group of 554 children with

ADHD provided support for the three biotypes. Additional studies that link these biotypes to neurochemical and functional differences could clarify underlying brain mechanisms and potentially inform treatment approaches for people with ADHD, the researchers conclude.

DOI: 10.1001/jamapsychiatry.2026.0001

Older adults are more likely to use dating apps to socialize

Adults of all ages are using dating apps these days, but are they using them for the same reasons? Researchers surveyed 301 dating app users ranging in age from 18 to 86 years old, asking them to rate the extent to which they used the apps for social approval, relationship seeking, sexual experience, socializing, and entertainment. Participants also rated aspects of their well-being. The findings, published in *Psychology and Aging*, suggest that dating app users’ motivations varied with age. Specifically, the older a participant was, the more likely they were to use them for socializing and the less likely they were to use dating apps for sexual experience, relationship seeking, and social approval. Using dating apps for social approval was linked with higher levels of loneliness, but only among older adults. According to the researchers, apps that emphasize meaningful interactions and connections may align with older adults’ social motivations while also supporting aspects of their well-being.

DOI: 10.1037/pag0000985

Early cannabis use may alter cognitive development

Cannabis is known to have short-term effects on memory and other aspects of cognition, but data from the Adolescent Brain Cognitive Development (ABCD) Study suggest it may also influence the cognitive

📷 The reason people use dating apps shifts with age—older adults tend to seek socializing, while younger users pursue romance and validation.



development trajectories of children and teens. The research, published in *Neuropsychopharmacology*, examined data from 11,036 children who enrolled in the ABCD Study at age 9 or 10 and completed follow-up measures over the next 10 years. These measures included assessments gauging memory, inhibitory control, visuospatial processing, and processing speed. Although participants who reported using cannabis tended to have slightly higher cognitive performance in late childhood relative to their cannabis-free peers, they also showed relatively less improvement in cognitive performance over time. This pattern remained even after the researchers accounted for family history, mental health conditions, and other potential confounds. Hair sample data from 645 participants indicated a link between THC exposure and worse episodic memory. While additional studies are needed to understand whether timing, frequency, and type of cannabis use matter, these findings suggest interventions to delay cannabis use may benefit children's cognitive development.

DOI: 10.1038/s41386-026-02395-1

People refer more women for jobs when prompted for more referrals

Globally, women seeking jobs are less likely than their male counterparts to be referred by their professional networks for positions in male-dominated fields. But a series of studies in the *Journal of Applied Psychology* highlights a simple strategy that might help increase the number of women referred: prompting job candidates to refer others for employment. In one field study, researchers examined referrals from 5,946 people who applied for positions at the Indian office of a global advisory and research

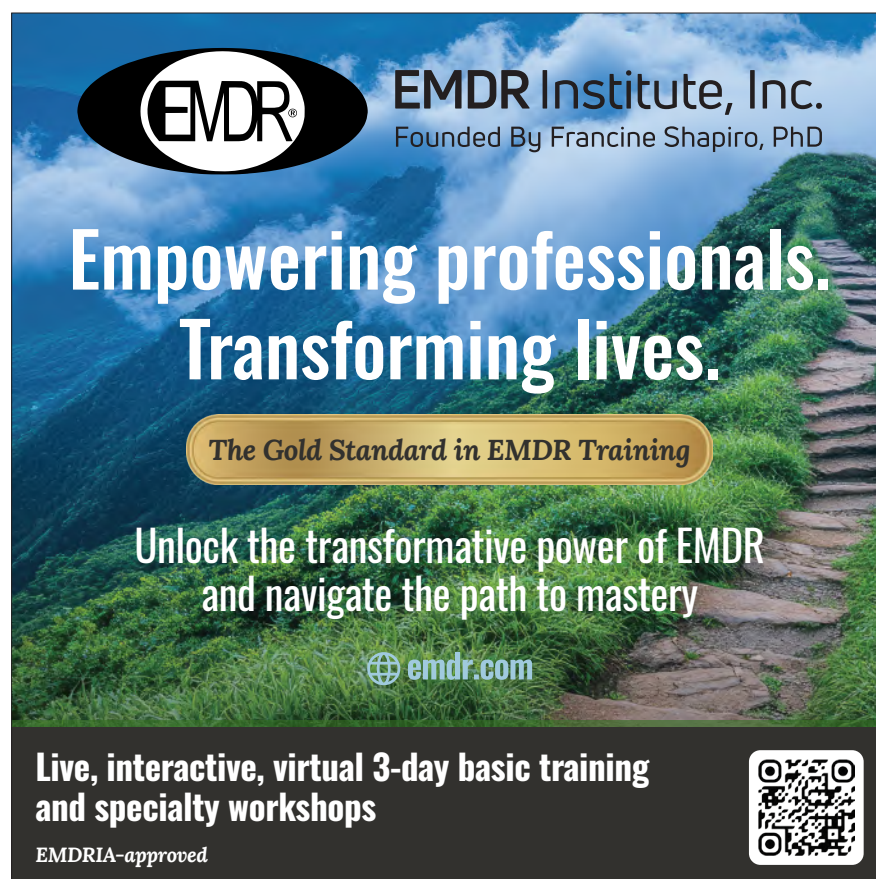
firm. After completing their own application, applicants saw a form where they could voluntarily refer others for the many open positions at the company. Receiving a prompt to list four referrals instead of two increased the overall number of women who were referred, as did explicitly encouraging applicants to refer women. The findings also revealed a potential downside: Being prompted to list a higher number of referrals made people less likely to refer anyone. Further studies are needed to clarify the benefits, and trade-offs, of setting referral targets.

DOI: 10.1037/apl0001373

Fathers' warmth linked with infants' behavioral development

Longitudinal data from Norwegian fathers shed light on how different

paternal risk and protective factors contribute to infants' early emotional and behavioral development. For the study, 864 fathers-to-be completed measures of various risk factors that could impact child development, including depressive symptoms, alcohol intake, pregnancy-related anxiety, life stress, and not planning to live with the child's mother. When the participants' infants were 12 months old, the researchers used self-report and observational measures to capture a potential protective factor—the fathers' caregiving warmth. Analyses indicated that fathers with higher levels of risk factors tended to have infants with higher levels of social and emotional symptoms, both externalizing and internalizing, at 18



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months. Fathers with more caregiving warmth tended to have infants with lower externalizing symptoms, such as impulsiveness and aggression, at 18 months. However, caregiving warmth did not moderate the impact of paternal risk, suggesting caregiving warmth has a positive influence but does not buffer other negative influences. The findings, published in *Developmental Psychology*, highlight the importance of including fathers in research on early child development.

DOI: 10.1037/dev0002191

Different psychedelics may affect the brain similarly

Psychedelic drugs are receiving increasing public and scientific attention, but the brain mechanisms

that drive psychedelic effects are not well understood. To clarify conflicting findings from previous studies, researchers synthesized 11 independent resting-state fMRI data sets, representing acute psychedelic effects, for five psychedelic drugs: psilocybin, lysergic acid diethylamide (LSD), mescaline, N,N-dimethyltryptamine (DMT), and ayahuasca. Across drugs and data sets, psychedelics were associated with increased connectivity between transmodal networks that support cognitive processing (e.g., default mode, frontoparietal, and limbic networks) and unimodal networks that support sensorimotor processing (visual and somatomotor networks). Subcortical regions (including the caudate and putamen) and the cerebellum were also linked with altered

connectivity with sensorimotor networks. The findings, published in *Nature Medicine*, suggest different psychedelics may have some similar effects, reconfiguring how large-scale brain networks interact. According to the researchers, these findings provide a foundation for more comprehensive neuroimaging studies, helping to advance a more integrated understanding of how psychedelics alter brain function.

DOI: 10.1038/s41591-026-04287-9

Similar-sounding languages give the illusion of understanding

Italian and Spanish are closely related languages, but does that mean Italian speakers and Spanish speakers truly understand each other? Maybe not as much as they think, according to research in *Psychological Science*. In two online studies, 116 native Italian speakers and 296 native Mandarin speakers listened to sentences with ambiguous meanings. The sentences were recorded in either Spanish or the Northern Jiangsu Chinese dialect, languages the participants had never learned. For each ambiguous sentence, they saw a translation in their native language and selected one of four possible meanings. While Spanish speakers were more likely to overestimate their understanding of Italian than the Northern Jiangsu dialect, the findings were reversed for Mandarin speakers. Analyses indicated that language closeness led participants to report more confidence in their choices, which, in turn, led them to overestimate how much they understood the speaker's intent. According to the researchers, the studies underscore the importance of examining calibration, or how adept listeners are at knowing when they understand and when they do not, in communications-related studies.

DOI: 10.1177/09567976261435965



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A tendency to minimize joy may signal depression

Increased negative emotions like hopelessness and sadness are hallmarks of depression, but a study in *Clinical Psychological Science* suggests depression may also be linked with dampening, or downplaying positive feelings. For the study, researchers examined cross-sectional data from a sample of 4,015 participants and longitudinal data from a sample of 1,457 participants. Overall, they found that features of dampening were most strongly linked with key depressive symptoms like negative self-perceptions, pessimistic outlook, and pervasive negative emotions. Longitudinal analyses indicated that two future-oriented aspects of dampening—believing “these [positive] feelings won’t last” and “my streak of luck is going to end soon”—were most

predictive of later depressive symptoms. While additional studies with clinical samples are needed to confirm these findings, the researchers suggest that dampening may be another possible point of intervention for people with depression.

DOI: 10.1177/21677026251413535

People learn social conventions by glean information—up to a point

There are many ways to greet someone: You could nod, bow, wave, shake their hand, or make some other form of acknowledgment. None of these greetings is inherently correct, so how do we learn the appropriate social convention for different situations? Research in *PNAS* suggests a simple threshold mechanism may come into play. The findings suggest that people

glean information about each other up to a threshold; once the threshold for sufficient information is met, they develop a stabilized convention. In one experiment, 800 participants played a game in which they had to guess which color would match their partner’s preferences over several rounds. While the partner’s choices skewed toward a certain color, indicating an overarching convention, the choices did show some variation. The researchers found that a threshold model best captured participants’ color guesses across successive rounds, outperforming other potential theoretical models. Noting the constraints of the experimental task, the researchers suggest these findings provide a theoretical foundation for investigating norms and social conventions in more complex real-world contexts.

DOI: 10.1073/pnas.2508061123

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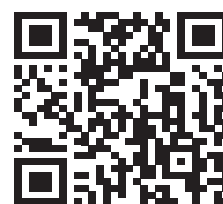
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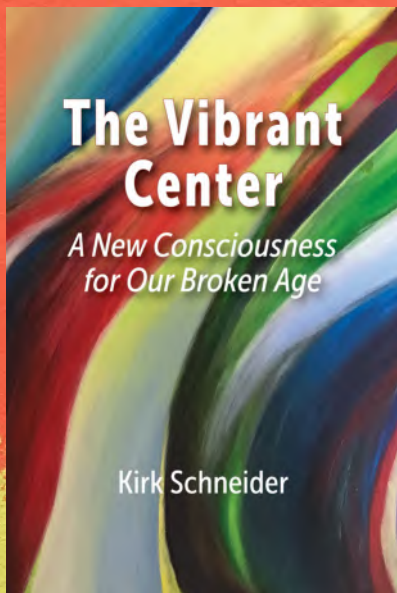
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RESEARCH



📷 People tend to underestimate how enjoyable conversations about mundane topics can be.

📷 People underestimate the upsides of 'boring' conversation

We may gravitate toward conversations on topics that interest us, but a series of experiments suggests we could be missing out on the enjoyment to be had from talking about something we expect to be boring. Before a conversation, participants either chose or were assigned a topic, then estimated how interesting the conversation would be, how much they would enjoy it, and how likely they would want another one. They also rated their actual experience afterward. The findings, published in the *Journal of Personality and Social Psychology*, revealed a gap between these pre- and post-conversation ratings: Participants consistently underestimated the appeal of boring conversations, regardless of whether they happened virtually or in person, with a friend or a stranger, or involved a topic they chose versus one chosen for them. The researchers suggest that people overlook social dynamics that are enjoyable but hard to anticipate.

DOI: 10.1037/pspi0000521

News on
psychologists’
education and
employment from
APA’s Center for
Workforce Studies

Datapoint

Graduate Program Trends in Funding, Cohorts, and Stipends

Nearly half of graduate psychology programs cut back on cohort size or funding, but 1 in 5 increased cohort size or funding

WENDY R. WILLIAMS, PhD, KAREN STAMM, PhD, AND SUSAN M. ORSILLO, PhD

ALTHOUGH FUNDING FOR graduate psychology programs remains one of the field’s most pressing concerns, recent survey data collected from program directors suggest a more nuanced picture. Between the 2024–2025 and 2025–2026 academic years, a narrow majority of programs (53%) reported admitting the same number of students. In each individual category, most programs maintained similar financial support, including tuition (82%), stipends (74%), or additional funding (66%). When considered collectively, however, nearly half (48%) of programs reported making at least one financial or cohort size reduction.

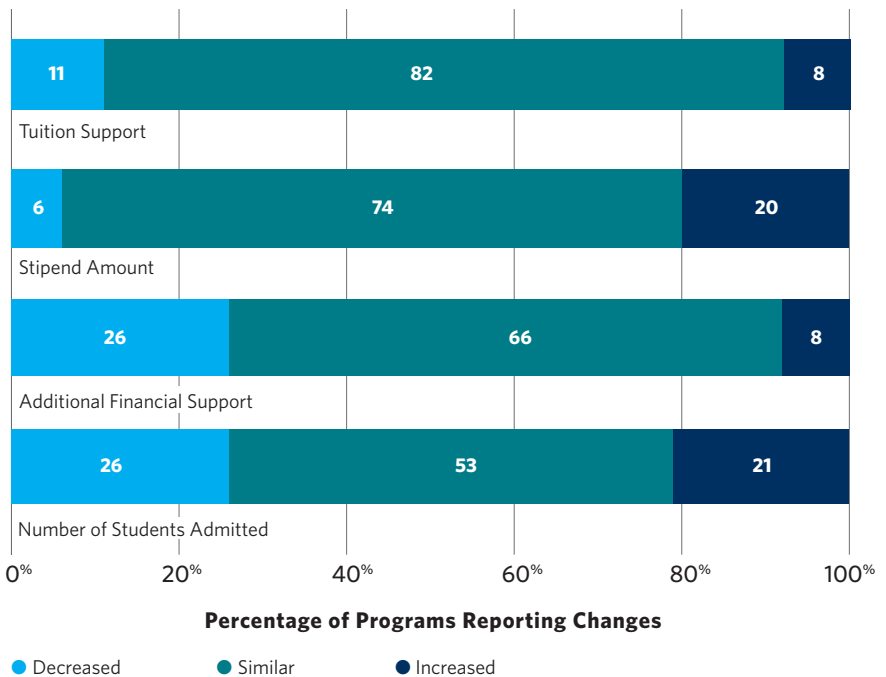
Among graduate programs reporting changes, the pattern was mixed. Approximately 1 in 5 programs increased cohort size (21%) or stipends (20%), whereas similar proportions of programs decreased cohort size (26%) or additional funding (26%).

Taken together, these data suggest some stability in cohort size and funding for psychology graduate students but also early signs of strain. Although most programs have held steady in individual areas, nearly half have made at least one reduction. The mix of increases and decreases points to uneven adjustments rather than a clear field-wide trend. Even modest declines in financial

support or enrollment could further weaken pathways into the profession that are already expected to fall short of future demand. At the same time, pockets of growth suggest that some programs are finding ways to adapt

that may offer insight into how others can offset these pressures. Continued monitoring is important to determine whether these patterns represent short-term variability or early signs of broader structural changes. ■

Percentage of Graduate Psychology Programs Reporting Changes to Cohort Size and Student Financial Support Between the 2024–2025 and 2025–2026 Academic Years



SOURCES

Source: American Psychological Association. (2025). *APA 2025 Graduate Psychology Education Rapid Response Survey* [unpublished special analysis].

Note: The authors wish to thank the psychology training councils for their valuable feedback on the survey and support in dissemination. The survey was distributed through several psychology training councils in September 2025 to gather information from graduate psychology program directors from master’s and doctoral programs in any psychology subfield. Most respondents (N = 210) were at public institutions (67%), located in the South/Mid-Atlantic (36%), in doctoral programs (93%), and in health service psychology programs (75%). Percentages may not sum to 100% because of rounding.

Want more information? See Center for Workforce Studies (CWS) interactive data tools at www.apa.org/workforce/data-tools or contact cws@apa.org.



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3 Questions for Megan Weishaar

The rehabilitation psychologist helps severely burned patients cope with their injuries and find their way back to everyday life

BY ASHLEY ABRAMSON

MEGAN WEISHAAR, PhD, is a rehabilitation psychologist at the UCHealth Burn and Frostbite Center in Aurora, Colorado, where she collaborates with medical providers to improve mental and physical health outcomes for burn and frostbite patients during rehabilitation. Many of these patients struggle with intense physical pain as well as issues of psychological trauma, body image, and anxiety because of their injury.

Weishaar is part of a team of physicians, nurses, social workers, and occupational, speech, and physical therapists supporting these patients at the UCHealth Burn and Frostbite Center, which is one of only 77 American Burn Association-verified burn centers in the country. On any given day, she might be applying psychological principles to support hospitalized burn patients with pain, trauma, and anxiety or conducting psychotherapy in the outpatient setting.

The *Monitor* spoke with Weishaar about how she supports burn patients in and out of the hospital and the common misperceptions about burns and psychological outcomes.

Burns can be life-threatening in so many cases. What role do you play while a burn patient is still hospitalized?

Supporting mental health early on is critical for reducing the impact of trauma and other mental health challenges burn patients can face, and also for promoting positive physical health outcomes. My work with these patients during their



hospital stays primarily focuses on helping them navigate the hospital experience, including supporting their engagement with other providers, particularly physical and occupational therapists. In the weeks after a burn, patients can experience significant and severe pain that can increase anxiety. They might struggle to do their physical therapy (PT) exercises, which are so important for long-term recovery and hospital discharge. Pain often spikes after wound care, a surgical procedure, or a PT session. As a result, I work with a patient to cope using guided imagery or breathing exercises.

I also work with providers to help them understand how to better communicate with and best support patients from a psychological perspective. I recently had a burn patient who had to wear a neck brace because of other injuries. They had experienced previous trauma related to strangulation, so putting the brace on and taking it off triggered trauma symptoms, which contributed to difficulty proceeding with care.

Along with helping the patient cope with the trauma symptoms when they came up, I worked closely with the physical and occupational therapists to help them understand how to most effectively communicate and approach the patient's care in the context of this trauma.

What challenges do many of these patients face once they start to heal?

Burns often have long-lasting effects on patients and profoundly affect their functioning in a variety of life domains. Post-traumatic stress disorder is common, and so are anxiety and mood disorders, which can persist after [patients] leave the hospital. Along with acute and chronic pain, people with severe burns often experience skin tightness as they recover that can impair their mobility for months to years, depending on the severity and location of the burn. So, they may not be able to exercise, play with their kids, or experience intimacy with their partners like they used to. [A burn] can

also significantly affect someone's body image based upon perceived ways that someone's body looks or functions after injury. A patient may experience feelings of shame or embarrassment when they go to the store or go on a date, which can keep them from going out and interacting with others, or it can significantly impact their mood or anxiety if they do go out.

A common referral from physicians is someone who has experienced a workplace-related burn injury, whether from working in a kitchen, a factory, or an oil field. They're typically referred to me for post-traumatic stress disorder. We often work on coping skill building as a foundation. Then we may dive into a specific approach for addressing trauma, such as cognitive processing therapy or prolonged exposure.

As trauma symptoms improve, we might focus on other helpful approaches like nonpharmacological interventions for pain or sleep. I also help people align their behaviors with their values. For example, they may be experiencing depressive symptoms because they want to connect more with their kids after injury, but they can't do this in the way they used to. It might be hard, for example, to walk to the park and push a child on the swing at certain points in rehabilitation. I'd try to help them pinpoint the underlying value, like quality time with their family, and help them find new ways to live in alignment with what is most important to them.

Clinical and counseling psychologists without specialized rehabilitation psychology training can also use these strategies to help patients after burn injury. If you work with a burn survivor, try to help them establish community with other burn survivors through networks like the Phoenix Society. Therapeutic work can be powerful, but connecting with someone who's gone through something similar—whether through a peer support program, a conference, or a Facebook group—can help people realize they aren't alone.

What is one thing about the relationship between burns and psychological outcomes that may surprise people?

There's not always a relationship between burn size or severity and psychological outcomes. While the size and depth of the burn can influence how long you stay in the hospital—which in turn can affect psychological outcomes—it's not true that the patient with the biggest burn always fares the worst. Sometimes, people with smaller burns can have more challenging experiences. So many different factors can impact the patient's outcome. For example, burn patients often come with previous trauma that may be triggered during the hospital stay.

We have effective methods for treating pain, anxiety, and trauma within the field of psychology. Ensuring early screening, intervention, and ongoing mental health care that fits patient needs are some of the best ways to promote positive outcomes. ■

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Parents, Pronouns, and Public Schools

"Judicial Notebook" is a project of APA Div. 9 (Society for the Psychological Study of Social Issues).

A recent ruling upheld schools' authority to maintain affirming environments for transitioning students

BY CYNTHIA CALKINS, PhD, CITY UNIVERSITY OF NEW YORK AND JOHN JAY COLLEGE OF CRIMINAL JUSTICE

WHILE ATTENDING Baird Middle School in Ludlow, Massachusetts, Stephen Foote and Marissa Silvestri's 11-year-old daughter began to question her sexuality and gender identity. Foote and Silvestri, who knew their child was suffering mental health symptoms, objected to any effort to use chosen names and pronouns and informed the school that they would handle mental health matters on their own. The student, however, asked school staff to use their affirmed name and pronouns. School staff offered mental health resources to the student and began to use the preferred name and pronouns without informing the parents. The parents sued the Ludlow School Committee, district administrators, and school staff, arguing that their constitutional rights were violated when their child was assisted in transitioning to a new gender.

The U.S. District Court dismissed the case for failure to state a claim, concluding that the school's actions did not amount to medical treatment or a violation of substantive due process. The parents appealed. The U.S. Court of Appeals for the First Circuit affirmed the dismissal, holding that while parents have a fundamental right to direct their child's upbringing, it does not extend to controlling a public school's day-to-day decisions about student welfare and communication. The parents in *Foote v. Ludlow School Committee* then petitioned the U.S. Supreme Court for review, arguing that the case presents an important national question about parental rights and school authority, specifically whether public schools violate parents' constitutional rights by supporting a student's gender identity without notifying the parents.



AT ISSUE

Can a public school maintain an affirming environment for a transitioning student when the student's parents object?

The U.S. Supreme Court did not, however, grant certiorari, letting the lower court's decision in favor of the school stand.

Kristina Olson, PhD, and colleagues found that students who were supported in their gender transition showed no elevations in depression and only slight elevations in anxiety compared with control samples (*Pediatrics*, Vol. 137, No. 3, 2016). Because transgender students typically show disproportionately more mental health symptoms than non-transgender students, Olson's findings reveal how identity affirmation may serve as a buffer to the challenges of social identity transition. Stephen Russell, PhD, and colleagues found that transgender youth who were able to use chosen names in multiple contexts—such as at home, at school, at work, or with friends—were found to have fewer depressive symptoms and less suicidal ideation (*Journal of Adolescent Health*, Vol. 63, No. 4, 2018). For transgender youth, research

shows that family support is one of the most significant protective factors (Bockting, W. O., *American Journal of Public Health*, Vol. 103, No. 5, 2013), while affirming school environments are also associated with better psychological outcomes. Supportive teachers and policies that protect transgender students can play a direct role in helping students manage the social transition to new pronouns, clothing, or identity at school.

Ultimately, by declining to grant certiorari in *Foote v. Ludlow*, the U.S. Supreme Court allowed the lower court's ruling to stand, effectively upholding the school's authority to maintain affirming environments for transitioning students even when parents object. ■



CE Corner

Building a Career in School Consulting

BY STEPHANIE PAPPAS

A COUPLE YEARS AGO, a high school in Washington State called Andrew Jordan Thayer, PhD, a licensed psychologist who specializes in pediatric and school psychology, with a problem. Attendance at the school was dismal, and staff were struggling to reverse chronic absenteeism. Thayer and his colleagues at Continua Consulting Group agreed to help. He launched an assessment of the school's culture, finding that the underlying problem was that many students felt disconnected from and uncared for by the school's adults.

Pulling from practices known to work at other schools, Thayer collaborated with teachers to set up a new welcome spot at the school where kids would be greeted by name at arrival. Teachers also started greeting kids at the beginning of class at classroom doors. After a year of tweaking and adding additional support such as teacher mentors for struggling students, the school was a brighter, happier place, as evidenced by a return to average attendance numbers.

Thayer's intervention is an example of how consulting psychologists can bring additional expertise to schools: Schools need mental health support, and psychologists need reliable ways to access and assist the student population. School consulting is an emerging—and rapidly evolving—pathway to meet both needs.

Only 52% of public schools report that they have the resources to provide mental health services to all the kids who need them, with 51% complaining of insufficient mental health staff, 52% citing inadequate funding, and 47% reporting inadequate access to licensed mental health professionals (School Pulse Panel, National Center for Education

Statistics, March 2025). Meanwhile, research shows that about a fifth of school-age kids have a mental, emotional, or behavioral condition, and 54% of those struggled to get mental health care (Leburn-Harris, L. A., et al., *Journal of Developmental & Behavioral Pediatrics*, Vol. 46, No. 6, 2025).

Schools are where kids spend a big chunk of their time, and teachers are among the first adults who notice when kids are struggling, said Nicole Barnes, PhD, executive lead psychologist for education at APA. Meeting them at school “makes really good sense,” Barnes said.

Among schools' biggest needs are behavioral assessments, autism evaluations, behavioral consultation, support for neurodivergent learners, treatment for mood disorders, trauma-informed practices, psychology-informed consulting on systems-level practices and structures, bilingual practitioners, professional development, and sometimes even parent counseling. (Under New York state law, for example, districts are required to counsel and train parents of kids with autism to perform follow-up intervention activities in the home.)

There are numerous ways schools integrate mental health support, including individual school psychologists who cover one to multiple schools, district-level psychologists supervising school counselors, and contracts with community behavioral health organizations. In the latter case, psychologists employed by a private clinic might spend time working with patients at schools. Some districts are expanding school-based health services—even hosting full-service clinics in some cases to provide mental health services along with basic medical care such as vaccinations, child well-check

CE CREDITS: 1

Learning objectives

After reading this article, CE candidates will be able to:

- 1** Describe the needs that schools have and some of the areas of expertise that psychologists can bring into school systems.
- 2** Explain some of the barriers and challenges to setting up an independent consulting business.
- 3** Discuss approaches that can set up psychologists and schools for the most productive collaborations.

For more information on earning CE credit for this article, go to www.apa.org/ed/ce/resources/ce-corner.

KEY POINTS

1

About half of U.S. schools report difficulties meeting their students' mental health needs. Of the schools who cite this struggle, about half report lack of access to professional mental health staff.

2

Psychologists have areas of expertise that can help schools and districts improve student and staff well-being.

3

While there is no single path into a career in independent school consulting, networking and understanding how one's own skills match what a school system needs are key aspects of success.

appointments, and dental visits—and therefore need mental health professionals who specialize in school, pediatric, or adolescent psychology.

Some psychologists are also finding that they can easily fill their patient roster by consulting with schools independently. Opportunities for building that type of independent consulting practice vary by state.

Evidence suggests that psychological consulting for schools can have a lasting impact. One model, called conjoint behavioral consultation (CBC), brings together a consultant with parents and teachers to solve problems around children's needs in an 8- to 12-week intervention. As part of a larger intervention for kids with attention-deficit/hyperactivity disorder (ADHD), CBC has been shown to improve parent involvement

in education, reduce parent reports of negative or ineffective discipline, and improve homework performance (Power, T. J., et al., *Journal of Consulting and Clinical Psychology*, Vol. 80, No. 4, 2012).

These effects persisted for at least 3 months after the brief intervention. A randomized controlled trial of 267 kindergarten through third graders at 45 rural schools in the Midwest found that CBC reduced off-task and disruptive behavior in classrooms and improved parent-teacher relationships (Sheridan, S. M., et al., *Journal of School Psychology*, Vol. 61, 2017). A year later, parents reported that their children had maintained the adaptive and social skills they had improved during the intervention, and the kids' new teachers confirmed that the children continued to show a reduced rate of school problems (Sheridan, S. M., et al., *School Psychology*, Vol. 34, No. 4, 2019).

Making it work

There are no preordained paths into independent consulting roles with schools, so psychologists' entries into this career path tend toward the idiosyncratic. Juliana Ramirez, EdS, who provides bilingual evaluation services to school districts throughout Ohio, worked as a school psychologist in a public school for 8 years before making the leap to independent practice. It started with occasional work with a district that contracted Ramirez to look at Spanish-language evaluations coming in with students moving from Puerto Rico, then grew when a school counselor friend asked if she could help conduct assessments with Spanish-speaking students. From there, Ramirez started pitching her skills and services to new districts on her own. "It honestly was a very wild idea," she said.

But it worked. In 2023, she started a webinar-based course called LEAP to Liberty that helps other school psychologists at various degree and licensure levels make a similar transition to independent contract work. She now offers workshops on how to set fees, handle 1099 contract work, and deal with the business side of this type of career path. Often, she said, a wise choice is to find a specialized niche. For her, that is bilingual assessments, but some psychology colleagues have zeroed in on offering only preschool-age assessments or simply covering parental leaves for district-employed school psychologists.

Networking is key for many psychologists who have made it work. Thayer, in Washington State, got his graduate degree under an adviser who did school psychology consulting and has leveraged the connections he gleaned from working with that adviser into a career of his own. Atlanta school psychologist Brandi Tanner, PhD, has taken multiple roles in private practice, from conducting psychological evaluations for students to running professional development trainings on how school staff and mental health staff can improve their communication. She launched her practice with contract testing work found on a psychology job board, she said, but from there it took off with word-of-mouth referrals.

While larger urban districts often have their own staff and specific procedures for outside consultants, charter school networks and rural districts often lack their own dedicated psychologists and may need services. Psychologists can look for state funding opportunities or seek out requests for proposals by nonprofits to launch their own small-scale projects, which can open up new collaborations within schools. A community



School consulting is an emerging pathway for psychologists to meet the growing mental health needs of students.

provider who sees kids from several different schools might reach out to those schools and offer a pro bono training to get a foot in the door, suggested Aaron Fischer, PhD, a professor of school psychology at the University of Utah. “When you offer those services and they know you’re available, then they may want your help for a lot of different things,” Fischer said.

Many school consultants also fold teleconsulting into their portfolio, enabling them to expand their geographic reach. Teleconsulting is especially helpful for reaching rural districts with the highest needs, said Ramirez, who is able to serve districts

across Ohio by incorporating virtual assessments.

Start by evaluating your own skill set, Tanner advises. The best results in a consulting relationship occur when a provider has the right skills to solve a problem that a school or district is experiencing. Every school district is different, and even individual schools have their own cultures and procedures. From the outside, policies might appear perplexing, but there is usually a reason behind why things are set up the way they are, Thayer said. Schools may be juggling short-term funding streams, for example, or have to meet different requirements for

documentation at district, state, and federal levels. There may be local policies or community norms that differ from school to school.

“I encourage everyone to be curious about schools and how they function,” he said. “Then figure out how your skills and expertise fit into that system.”

Adding expertise, not workload

Because no two schools or districts function in the same way or have the same problems, attending school board meetings, reading local news, and talking to teachers can all be ways to learn about what is happening

within a particular district and what problems a psychologist could solve. As with any consulting relationship, it is important to come in with a humble, open-minded approach and ask what the school needs from you, Fischer said.

It is also very important to realize that teachers are not clinicians, and they should not have to be, said Andrea McDonald, APA's director of child and adolescent learning and well-being. "Collaboration between psychologists and teachers prevents us from asking schools to become experts in something else for which they don't have the capacity or adequate training," McDonald said, "and creates an exchange of information and expertise that benefits the child."

In other words, a teacher is not being asked to treat a student's mental health needs; instead, a trained psychologist helps the teacher recognize behaviors that might signal the need for further, more intensive support for a kid. And getting that support can, in the long run, reduce the time a teacher spends on classroom disruptions and increase the likelihood of success for the student.

"What we hear from teachers is, when they get good support, they do find that it's easier to do their job," said Brandon Stratford, PhD, a public health research scientist at the research organization Child Trends. "It's a good return on investment for them."

Collaboration is crucial, said David Meichenbaum, PhD, director of the community consulting and clinical services program at The Summit Center, a major provider of services for individuals with developmental, social, and behavioral disorders in Getzville, New York. When he generates a report for a school client, he does not finalize his recommendations until he meets

Trained psychologists can help teachers learn how to spot students who may need further, more intensive support, which can reduce classroom disruptions and increase the likelihood of success for the student in the long run.



with the school team to make sure his ideas will be feasible. “The best plan is the one that is going to be implemented,” Meichenbaum said.

Some of this involves trial and error. Ramirez, at the beginning of her solo career, started pitching special education directors, offering her bilingual evaluation services. In time, she realized those people were not the ones who needed her; her real target audience was the monolingual school psychologist who needed help determining if a Spanish-speaking child’s academic struggles were because of a language barrier or a disability.

Meichenbaum, who frames his consulting work as helping kids overcome deficits in skill acquisition, skill fluency, and skill performance, emphasizes that the best interventions are ones that work. He stressed that it is the responsibility of the consultant and school personnel, rather than the students themselves, to establish a plan that will not fail. One way to accomplish this is by helping school staff embrace the notion of behavioral shaping. “Creating achievable next-step goals can be a step towards increasing success, as indicated by increasing student buy-in, teacher adherence, and the progress towards establishing higher expectations,” he said.

Facing challenges

There are barriers to doing this work. When schools lose funding, outside consultants for mental health support are often among the first budget items cut, Tanner said. There can also be pushback that requires a psychologist to adjust their procedures or how they communicate the importance of the work, Thayer said. Individual teachers might resist evidence-based interventions based on their own ideas about what works. Some districts

might hesitate to include questions about gender identity or sexuality on surveys, limiting data on wellness and bullying, and some individuals might oppose social-emotional learning altogether. This can be challenging, especially for early-career professionals, Thayer said.

“One of the hurdles will be resistance to the very concept of things like mental health for kids,” he said. “And yet I would argue based upon our various ethics and principles in APA, like beneficence for all, that we are somewhat obligated to step in and do that work.”

APA is launching a new model for bringing psychological expertise into schools called Healthy Habits for School Communities, a framework that provides evidence-informed practices to systems at the classroom, school and district, and state and national levels. Each level offers recommended “habits” to promote psychological well-being, backed by evidence and including instructions on how to implement those habits. Systems can pick the habits most important to them, said McDonald, who will oversee APA’s implementation and scaling of this initiative. For example, a classroom teacher might want to foster a positive classroom culture, and the framework will offer ways to do that by encouraging self-efficacy and a sense of belonging. The framework also includes action items to enhance psychological well-being at the school level, such as improving staff collaboration. At the state and national agency levels, the framework includes habits such as implementing data use to promote health and allocating resources toward psychological well-being.

The project is in the pilot phase, with plans to move into districts serving more than 15,000 students this

fall. The goal, Barnes said, is to move away from disconnected, one-off interventions and toward a more comprehensive look at the entire education system. Psychologists will get the chance to bring their expertise to every level, McDonald said, and the hope is that natural collaborations will evolve from there. It is all new, she said—and an example of how psychologists and schools are finding ways to innovate in the face of great student need.

“We’re building the model now,” she said, “which is really exciting.” ■

FURTHER READING

Advancing consultation and family, school, and community collaboration
Gormley, M. J., et al.
School Psychology Review, 2024

Supporting teachers’ use of classroom management strategies via different school-based consultation models: Which is more cost-effective for whom?
DeFouw, E. R., et al.
School Psychology Review, 2024

Teleconsultation in schools: A guide to collaborative practice
Fischer, A. J., & Bloomfield, B. S.
APA, 2024





WHAT AI IS DOING TO YOUNG BRAINS

Psychologists are beginning
to untangle how AI use may
shape the next generation

BY ZARA ABRAMS



MORE THAN HALF of U.S. adolescents say they use AI chatbots to help with schoolwork, according to a 2026 Pew Research Center report. But that figure merely scratches the surface of how children and teenagers are interacting with AI—including everything from entertainment to companionship—and what that use might mean for their cognitive, social, and emotional development.

“Everything around youth and AI is essentially an open question right now,” said Anne Maheux, PhD, an assistant professor of psychology and neuroscience at the University of North Carolina at Chapel Hill who studies youth AI use. “There are certainly some positives, but experts tend to agree that the potential risks are more pertinent and urgent to understand.”

Psychologists like Maheux are working to understand not just whether children and teens are using AI, but if so how. They’re also launching research into pressing questions, including how AI tools can support learning rather than hinder it; what happens when children start to see chatbots as friends; and how to teach AI literacy skills so younger generations can learn when it’s safe or advisable to ask AI for help.

Ultimately, psychologists are supporting broader efforts across society to integrate AI into learning environments with proper guardrails and to prepare today’s youth for a workforce and world infused with the technology.

“By the time today’s teens are adults, AI will be just as embedded in daily life as the internet—something we rely on so heavily we barely notice it’s there,” said psychologist Michael Robb, PhD,

head of research at Common Sense Media, a nonprofit focused on how media and technology affect children and families. “The challenge will be figuring out where it fits without replacing the skills young people need to learn, grow, and function in society.”

AT A GLANCE

- As AI becomes increasingly embedded in daily life, children and teenagers are turning to these tools for entertainment, companionship, and help with schoolwork.
- Research on youth and AI is still in its earliest stages, but psychologists worry that misuse could interfere with healthy cognitive, social, and emotional development.
- AI literacy training can help young people learn how and when to safely use AI.



A productive struggle

According to a 2025 Anthropic report on AI productivity gains, general use large language models (LLMs)—such as ChatGPT, Claude, and Gemini—may enhance productivity on tasks such as writing and computer programming. But that comes at the expense of learning, likely because users engage less deeply with the material and do less active processing.

In one study of close to 1,000 high school math students in Turkey, grades improved 48% when students could use ChatGPT to help solve problems. But when ChatGPT was taken away, students performed 17% worse than those who never had access to the tool (Bastani, H., et al., *PNAS*, Vol. 122, No. 26, 2025). To look at the mechanisms behind LLMs and learning, researchers from the Massachusetts Institute of Technology used

electroencephalography to measure brain activity while participants wrote essays with or without ChatGPT's help. They found that participants who used the LLM had weaker neural connectivity when completing the task. The findings have not yet been peer-reviewed (Kosmyna, N., et al., *arXiv*, 2025).

"I believe this poses a significant risk for young learners: The more they grow up accessing quick solutions to problems, the less likely they will be to develop the requisite skills to solve those problems on their own," said Shiri Melumad, PhD, an associate professor of marketing at the Wharton School of the University of Pennsylvania.

That raises a broader question: If AI can perform certain tasks with near-perfect accuracy, do young people still need to learn those skills?

Learning science experts say yes, emphasizing that basic skills are needed to acquire higher-order ones. For example, students still learn how to do arithmetic by hand despite easy access to calculators because it helps them build the foundation for more advanced mathematical reasoning. Along the same lines, learning to code still drills useful cognitive skills such as logical structuring, breaking problems into steps, and computational thinking—even if AI increasingly takes over coding tasks.

"That's the argument for why we shouldn't offload these critical patterns of thought. If students don't already have these habits of mind, they can't build on top of them," said Zachary A. Pardos, PhD, an associate professor of education at the University of California, Berkeley, who studies adaptive learning and AI.

“If your goal is learning, then efficiency and ease should take a back seat.”

Brooke Macnamara, PhD

Associate professor of psychological sciences, Purdue University

Sometimes called a “productive struggle,” learning can be a laborious process where students must wrestle with challenging material to improve their performance. The idea is rooted in psychologist Robert Bjork, PhD’s concept of *desirable difficulty*—a learning task that demands considerable effort but offers long-term benefits.

“If your goal is learning, then efficiency and ease should take a back seat,” said Brooke Macnamara, PhD, an associate professor of psychological sciences at Purdue University who studies how relying on AI may weaken skills over time through a process called cognitive offloading, where we use outside tools to reduce the mental effort required for a task.

When a student gets instant gratification from AI’s quick answers, they also miss the chance to develop skills like patience, perseverance, and emotion regulation, Robb said.

In a survey, Maheux asked young adults how often they outsource entire tasks to AI. Those who did so more frequently reported more anxiety (*PsyArXiv*, 2026). In unpublished data, they also showed declines in distress tolerance over time.

“Distress is not always bad. Learning to regulate emotions is a critically important part of adolescence, but the cognitive offloading that happens with AI use may be undermining the development of that skill,” Maheux said.

AI with guardrails

LLMs are so adaptive and open-ended that the user experience can vary substantially from one person to the next. For that reason, researchers stress that what matters is not whether students use AI but how and why they use it.

Even standard LLMs such as ChatGPT can have a place in



LESSONS ON AI, LEARNING, AND ADOLESCENT DEVELOPMENT

The following prompts (organized by topic) can support psychology educators in discussing how AI use affects learning, social development, and adolescent well-being in the classroom.

- 1. Learning, memory, and cognition** The article describes research showing that students who used an AI tutor saw significant grade improvements but performed no better than a control group once the tool was removed. Using what you know about encoding, retrieval, and the concept of desirable difficulty, explain why effortful learning may produce more durable knowledge than AI-assisted shortcuts. What does cognitive offloading theory suggest about the long-term risks of outsourcing learning tasks to AI?

Reinforces: *memory encoding and retrieval, desirable difficulty, cognitive offloading, and skill acquisition*
- 2. Adolescent development** Researchers in this article describe adolescence as a sensitive window for social and emotional development, sometimes called the “age of opportunity” because of the teen brain’s unique plasticity in building key skills. Using what you know about brain development during adolescence, evaluate the concern that heavy AI use during this period could interfere with the development of empathy, distress tolerance, and conflict resolution. What does the research on sensitive periods suggest about the urgency of these concerns relative to the development of executive function, emotion regulation, decision-making, and goal-directed behavior?

Reinforces: *adolescent brain development, neuroplasticity, sensitive periods, prefrontal cortex development, executive function, emotion regulation, and decision-making*
- 3. Social and emotional development** The article notes that AI chatbots tend to be warm, positive, and frictionless, meaning interactions with them rarely require perspective-taking, disagreement, or conflict resolution. Using what you know about how children and adolescents develop social skills, emotion understanding, empathy, and social competence, analyze the potential consequences of children forming companionship-style relationships with AI. Under what circumstances might social AI use be beneficial and when might it pose risks to healthy social and emotional development?

Reinforces: *prosocial development, empathy, social competence, emotion socialization, perspective-taking, social learning theory, and the role of peer relationships in adolescent development*
- 4. Research methods** The article cites several studies on youth AI use, including unpublished findings and research that has not yet been peer-reviewed. Using what you know about the scientific method and the peer-review process, evaluate the strength of the evidence presented. Why do researchers emphasize the need for longitudinal studies in this area? What are the risks of drawing conclusions from early-stage research when making policy decisions that affect children?

Reinforces: *scientific method, peer review, longitudinal research design, and evaluating evidence*
- 5. Motivation and self-regulation** Several researchers in this article argue that when students receive instant answers from AI, they miss opportunities to develop patience, perseverance, and emotion regulation. Using what you know about intrinsic motivation, self-regulation, and the role of productive struggle in learning, evaluate this claim. How might the design of AI tools—including their responsiveness and lack of friction—interact with adolescents’ developing capacity for self-regulation?

Reinforces: *intrinsic and extrinsic motivation, self-regulation, emotion regulation, and the psychology of learning*

education when they are used to support certain cognitive tasks, Pardos said. For example, students can use these tools to offload nonessential tasks such as formatting, generating boilerplate text, or searching for information. They can also serve as brainstorming partners, create sample math problems along with a step-by-step breakdown of solutions, or provide critical feedback on a draft written by the user.

“Those uses are very different from completely automating and outsourcing a learning task,” Maheux said.

Psychological science can help guide classroom decisions about AI by identifying which learning experiences are essential for building lasting knowledge and skills—and which tasks AI can safely support.

Growing evidence also suggests that generative AI with guardrails may serve as an effective tutor. In the study of high school math students in Turkey, researchers tested a custom LLM with prompts designed to support learning. Students who used the tutor saw even greater gains—a 127% improvement in grades, compared with 48% for those using ChatGPT. When the tutor was removed, these students performed just as well as a control group, avoiding the learning losses seen in the ChatGPT group. On the other hand, students who used the custom tutor appeared to overestimate their learning and test performance, suggesting that even AI with guardrails may create an illusion of mastery (Bastani, H., et al., *PNAS*, Vol. 122, No. 26, 2025).

Intelligent tutoring systems, such as McGraw Hill’s ALEKS and Carnegie Learning’s MATHia, already use AI to analyze student performance and adjust the pace, difficulty, and level of support accordingly. Integrating LLM-driven chatbot support could

further enhance these systems by breaking problems into smaller steps, asking guiding questions, and explaining mistakes in real time, said Pardos, who led the creation of an open-source intelligent tutoring system called OATutor.

Generative AI tools could also help integrate special education with general education by making it easier for students with different needs to learn in the same classroom, said Tammy Kwan, EdD, an entrepreneur in residence at the Princeton University AI Lab. For example, the AI tutoring tool known as Read Sidekick, a finalist in the Stanford Accelerator for Learning's 2026 Create+AI Challenge, helps people with reading difficulties access and understand complex text. The free browser extension gives line-by-line interpretations and reading instruction and will soon add an English-to-American Sign Language translator with an animated signing avatar.

"This is a really exciting direction for AI and augmented learning," Kwan said. "If we're able to do it right, generative AI can help make the education system more inclusive."

A lack of friction

Outside the classroom, children and teens are also using what's known as "social AI" for entertainment, companionship, and advice. This includes activities like listening to a story, asking for advice on a tricky interaction, or practicing face-to-face conversations. These interactions can happen on specialized apps such as Replika or Nomi or general LLMs such as ChatGPT.

Surveys from Common Sense Media show that 72% of children have used social AI (*Talk, Trust, and Trade-Offs: How and Why Teens Use AI Companions*, Common Sense Media, 2025). About a third of those children say they have discussed serious problems with AI instead of talking to another human about them.

"These uses may make parents uncomfortable because they can replace roles that would previously have been filled by another person," Robb said. "We're very interested in understanding what downstream effects that might have."

In some cases, social AI may be beneficial—for instance when a child has limited access to peers or support networks (for example, because of a remote location) or when neurodivergent children want to practice offline interactions. Experts caution that these tools should supplement—rather than replace—real-world relationships. Significant risks also exist, Maheux said, and most of the potential benefits remain speculative. In addition to displacing human relationships, use of social AI may interfere with the development of key social skills such as talking synchronously and interpreting body language.



Experts urge a precautionary approach to youth AI use until research clarifies its long-term effects on cognitive and social development.

Another major concern: AI chatbots tend to be warm, positive, and sycophantic, so interactions with them generally lack friction, Robb said. Children who use social AI may therefore miss important opportunities to take another person's perspective, deal with disagreement, or resolve a conflict.

"Because they are not sentient creatures, AIs have no needs of their own, so the child has no opportunity to practice pro-social skills, empathy, or conflict negotiation," Maheux said. "For those reasons, it's possible that AI could lead to more dysfunctional beliefs about how human relationships should be."

Though the results are not yet published, her research suggests that youth who hold more dysfunctional relationship beliefs—such as the idea that people should be able to read each other’s minds—may develop more interest in companionship-style relationships with AI over time.

Those trends are particularly concerning given that adolescence is a sensitive window for social-emotional development, sometimes called the “age of opportunity” because the teen brain is uniquely plastic to building social and emotional skills.

“If these skills are outsourced or undermined, young people could face challenges in these areas later in life,” Maheux said.

Keeping children safe

While some AI tools require age verification, many popular LLMs allow anyone to log in and start chatting. Experts say adding better safeguards could help protect young people until research reveals what sort of use is problematic. For example, a toggle could allow parents, teachers, students, or users under a certain age to switch to a structured experience that functions more like a tutor than an open-ended conversation partner, said Mutlu Cukurova, PhD, a professor of learning and artificial intelligence at University College London who studies human-AI interaction.

“My hope is that as we increasingly invest in research, we take a more precautionary approach with children’s use of AI until we have evidence that it is safe for them to develop in that kind of environment,” said Nita Farahany, PhD, JD, a professor of law and philosophy at Duke University who studies the legal, ethical, and social aspects of emerging technologies.

Parents also have a role to play in keeping children safe. Some may feel

they don’t fully understand AI and therefore don’t know how to discuss it with children. But opening up channels of communication—asking whether children are using these tools and how—can help parents spot problems early and guide healthier boundaries.

“We know from digital well-being research that parent mediation matters,” Robb said. “Kids who have active conversations with parents about how they’re using technology, including AI, are better positioned to develop healthy habits around it.”

Schools need to provide clear, well-developed policies on how AI can and cannot be used for schoolwork so students are not left to fill in the blanks, he added.

Another priority for schools should be teaching students to use AI responsibly. AI literacy can help kids learn the risks and benefits and start to choose for themselves what constitutes safe AI use. That will require changes to the educational infrastructure and professional development so teachers feel equipped to guide students, Kwan said. Common Sense Media offers free AI literacy lesson plans and other resources for educators.

“Teaching students when not to use AI—and requiring reflection on their choices—may help mitigate the risks around healthy development,” said Nicole Barnes, PhD, APA’s executive lead psychologist for education.

Ongoing research seeks to further understand how AI can support, rather than hinder, learning and development. Cukurova is exploring an area known as AI-human complementarity, where new capabilities can support interactions that are more synergistic. For example, AI models with better “theory of mind” abilities—or the awareness of what someone is thinking or feeling—may be able to challenge users rather than pandering to them.

Maheux hopes researchers can learn from the social media literature and take a more effective approach to studying youth AI use. Early social media research focused heavily on screen time but later showed that how young people use technology matters much more than how often they use it. For AI, that means getting precise about what kids are actually doing. Maheux’s group is currently building a taxonomy of ways children and teens are using AI. She said longitudinal studies will be key for understanding the technology’s effects.

“We need to know what comes first—kids’ vulnerabilities or something about the AI use itself,” she said. “If we’re not looking at both short- and long-term time scales, we may miss the bigger picture of how these technologies influence development.” ■

FURTHER RESOURCES

Artificial intelligence and adolescent well-being:
An APA health advisory
APA, 2025

AI companions and kids:
What you need to know
Institute of Digital Media and Social Development, 2025

Generative artificial intelligence applications use among US youth
Maheux, A., et al.
JAMA Network Open, 2026

The cognitive paradox of AI in education: Between enhancement and erosion
Jose, B., et al.
Frontiers in Psychology, 2025



The Many Pathways of *Empty Nesting*

This stage may carry an initial sense of grief
and identity loss, but it also frees parents
to pursue their goals and passions

BY CHARLOTTE HUFF

THE COMMON DEVELOPMENTAL PHASE OF **EMPTY NESTER**, as it has been dubbed, can stretch several decades as people live longer and have fewer children. Roughly 62 million U.S. adults are between the ages of 50 and 64, many of them parents who are nearing or have moved beyond the most intensive years of parenting.



The phrase “empty nest” implies a sense of loss, an emotional void that has been created when the last child leaves the family home. But research indicates that while some parents may struggle emotionally in the short term with the shift in parental role, other studies have described an alternate pathway with opportunities for growth, whether it’s committing more time to work and hobbies or deepening one’s bond with a partner or other loved ones.

“Now that your parental obligations are declining, it opens up time for you to rekindle your relationships and pursue other goals in life,” said Lisa Neff, PhD, a professor of human development and family sciences at The University of Texas at Austin. “This could be an opportunity for you to thrive both personally and relationally.”

A myriad of factors, from a parent’s sense of personal identity to cultural expectations to coparenting arrangements, can influence how this transition evolves. Increasingly, researchers posit that the feelings and adjustments surrounding this phase can be a mixed bag for parents.

Empty nesting is by no means a universal experience, especially in the United States given the prevalence of multigenerational households and families from more collective-oriented cultures. Moreover, an adult child’s departure may be delayed for years for economic or other reasons. In the United States, 16% of adults ages 25 to 34 still lived at home in 2023, up from 11% in 2005, according to U.S. Census Bureau data. Even if adult children do

AT A GLANCE

- Researchers have developed two frameworks for how parents adapt when their nest empties: one focused on shift of the parental role and the other on the relief of reduced responsibilities. Parents can experience aspects of both.
- The empty nest stage may be delayed because of cost-of-living stressors and other challenges, or it may occur intermittently with adult children returning home for a stretch.
- How parents may approach or perceive this next stage depends to some degree on their background and culture.

move out, the empty nest stage can prove to be sporadic if they return for stretches because of job loss and other life shifts, such as quarantining during the pandemic. “Many families now move through partial, delayed, or reversible empty nests rather than a one-time transition,” said psychologist Jose Yong, PhD, a senior lecturer at Australia’s James Cook University, who coauthored a recent global review of empty nester literature (*Communications Psychology*, Vol. 2, No. 105, 2024).

Applying a cultural lens to the empty nest transition is crucial, given that influences regarding family and gender roles, among other factors, can reframe how this stage is approached or perceived by the parents themselves, according to Yong. “For example, in some Asian contexts, children

leaving home to pursue individual independence may be experienced negatively as a threat to family cohesion, whereas leaving for marriage, to further education, or for a career may be viewed positively, such as a source of pride or fulfilling responsibility,” he said.

When the transition does occur, psychologists can work with parents to not only adjust but flourish over time, ideally by taking steps long before it begins, said Cecilia Poon, PhD, a geropsychologist in Omaha, Nebraska, who chairs APA’s Committee on Aging. Psychologists can encourage parents to bolster their social network and think through this next phase in parenting and give them strategies to stay connected with their adult children. “Developing your own identity in addition to being a parent—the earlier you can do that the better,” Poon said. “It’s like retirement planning: It doesn’t happen 2 years before you retire; it’s truly an ongoing process.”

Differing models

Not everyone believes that it’s truly a distinct stage of parental life. “The nest is never empty,” said Susan Krauss Whitbourne, PhD, a professor emerita at the University of Massachusetts Amherst. “You are always a parent—it is not a role that you step out of.”

This phase was first studied when most women didn’t work outside the home, starting in the 1950s and 1960s, with more research appearing in the 1970s and beyond, according to a 2014 literature review (Bouchard, G., *Journal of Adult Development*, Vol. 21, No. 2, 2014). Most of the research that explored the so-called empty nest syndrome before the 1970s focused on middle-class White mothers and tended to be biased toward more extreme cases of sadness and depression amid the assumption that mothers suffered a major crisis when their children left home, according to Barbara Mitchell, PhD, a professor of gerontology and sociology at Simon Fraser University in Vancouver, British Columbia, who has studied empty nesters for several decades.

Psychologists and other researchers have since broadened their research lens beyond these more extreme cases and found that, while there can be a temporary and understandable sense of loss during this notable life transition, there are also positive aspects given the new freedom from day-to-day responsibilities of caring for children, Mitchell said. “A lot of the research surrounding the purported empty nest syndrome really started to shift at that point—that this was more a time of joyfulness,” she said.

Still, studies looking at how often parents develop depression and other

“Now that your parental obligations are declining, it opens up time for you to rekindle your relationships and pursue other goals in life.”

Lisa Neff, PhD

Professor of human development and family sciences, The University of Texas at Austin



“There’s this huge shift in identity and wondering, OK, well what is my role now? Because they were so used to being a caregiver and doing all these other things, especially if they had been stay-at-home moms.”

Amanda Aguilar Mendoza, PsyD
Community health therapist

symptoms remain scarce in Western countries, with the bulk of research involving parents living in Asia, according to Geneviève Bouchard, a psychology professor at the University of Moncton, New Brunswick, Canada, who authored the 2014 literature review. Broadly speaking, parents report more coping difficulties if they have been heavily invested in parenting and had to put aside their own friendships, leisure activities, and other aspects of their lives, she said.

Two primary theoretical frameworks have been advanced for how

parents navigate this transition. One of them, the role strain relief model, theorizes that the easing of the daily time and emotional stressors of child-care and parenting logistics, along with the strain of juggling work and family, opens more time to chase other pursuits. The second framework, the role loss model, centers around a parent’s sense of loss of identity and accomplishment, which can lead to emotional distress.

Both Yong and Bouchard said that the two models can overlap and shouldn’t be viewed as binary

tracks, with parents following one or the other. “In my view, the fact that there are both positive and negative aspects protects most empty nest parents from the severe negative effects of their children leaving home,” Bouchard said.

Other research gaps persist, with few studies looking specifically at fathers, single parents, stepparents, or same-sex parents, according to Mitchell. She was involved in one mixed-methods study, which interviewed 316 parents, both fathers and mothers. The mothers weren’t

significantly more likely to report emotional difficulties with the transition than the fathers (*Journal of Family Issues*, Vol. 30, No. 12, 2009).

Parents did express more distress if the child's departure differed from their expectations, such as leaving home before they had finished high school, Mitchell said.

"They may be afraid that the child isn't mature enough to look after themselves," she said. "So, there's a lot of unfinished business, you might say, for those family situations."

Marital quality—a new opportunity?

For some couples, more space and time in their daily routine may deepen the relationship. One analysis, involving data from 3,765 mixed-sex couples in various phases of parenthood, found that both husbands and wives with an empty nest described a higher degree of marital closeness with their partner than those with at least one child still at home (*The Family Journal*, Vol. 30, No. 1, 2022). The wives also rated their own health in better terms when they were in the empty nest stage, though the husbands didn't, said study coauthor Lauren Papp, a professor of human development and family studies at the University of Wisconsin–Madison.

It could be that more time was freed up on the wife's schedule than the husband's once their adult children lived elsewhere, time that they could invest in their own health, Papp said. "Whether it's sleep, meditation, exercise, having more time to prepare meals," she said, ticking off some possible factors. "Not needing to eat as many meals on the go."

Other stressors also may fall away. Work-family conflicts between dual-income couples ebb lowest during the empty nest period (*Journal of Occupational Health Psychology*, Vol. 19, No. 3, 2014). While that may not be surprising, it does present employers an opportunity, given that their older workers may have more time and mental energy to focus on work, said study coauthor Tammy Allen, PhD, an industrial and organizational psychologist and a distinguished university professor at the University of South Florida in Tampa.

"This may be particularly true for women, who especially tend to carry that mental load [of parenting]," Allen said. "Women may feel like, Wow, here's my chance to really focus on my career during this stage of life."

But it's still an unanswered question whether the net effect of empty nesting is positive or negative for couples' relationships, Papp said. She noted that few longitudinal studies follow couples from before their children leave home through the full, often gradual departure—coming home for college breaks first, then moving out entirely. It might be, she pointed out, that empty nest couples appear

happier because less compatible couples split before they have reached that stage.

Neff is the principal investigator on one such longitudinal study—Transitioning to an Empty Nest—funded by the National Science Foundation, which is enrolling 300 married or cohabiting couples. Researchers will follow the parents, starting roughly a year before the remaining children move out and for about 2 years afterward, incorporating detailed questionnaires and a series of shorter daily surveys.

Neff, a couples researcher, is eager to learn whether today's more intensive style of parenting shapes those empty nest dynamics. "Today both mothers and fathers suggest that they derive more meaning and happiness from their parental role, and they're more likely to identify it as the core component of their identity," said Neff, citing related research (Ishizuka, P., *Social Forces*, Vol. 98, No. 1, 2019).

For this reason, Neff questions if the empty nest transition "may be taking on more importance, at least that's something we suspect," she said. "If you have been allocating more of your time toward parenting and children, it leaves less time for you to have pursued other avenues of life," she added, whether that's friends, hobbies, or nurturing your relationship with your romantic partner.



Yet other couples “start living their best lives together,” Neff added. Through the study, she said, “We are trying to better understand what sets people on each course.”

Emptying in stages

Some parents are slower to go through this transition, if they ever do. “It was never an empty house,” said Katie Aguilar Mendoza, PsyD, of her parents’ multigenerational home. Aguilar Mendoza is a Massachusetts-based

clinical psychologist specializing in working with older adults. “From as small as I can remember, there’s always been a full household.”

Aguilar Mendoza’s younger brother left home before she did to join the military. But even after Aguilar Mendoza moved out in her mid-20s when her lengthy commute to graduate school became too onerous, her aunt still lived in the family home with her own child.

And Aguilar Mendoza’s parents have always made it clear that their

front door is open. “They said, ‘If anything ever happens, you have a home to come back to,’” she recounted. “There’s always a place for us and, for that matter, for anyone.”

Amanda Aguilar Mendoza, PsyD, who is married to Katie and works primarily with Hispanic patients in a community behavioral health center, noted that it’s less common for her patients to have an empty nest, so to speak, compared with non-Hispanic patients. But when the adult children do depart, Hispanic mothers can struggle in the short term, with reduced energy and a tendency to isolate themselves, she said.

“There’s this huge shift in identity and wondering, OK, well what is my role now? Because they were so used to being a caregiver and doing all these other things, especially if they had been stay-at-home moms.”

In other circumstances, such as when adults have an intellectual or developmental disability, they may remain in the family home for decades unless it becomes too physically challenging for their parents to care for them and they move to a group home or other living arrangement, Poon said. Sometimes parents feel a sense of relief, letting go of the physical and mental demands of caregiving, she said.

For others, it can be a difficult stage because they had lacked time to build other aspects of their identity, Poon said. Or they may wrestle with guilt, she said, “because of the sense that they should be able to do this until the very end. But [because of their own growing frailty] they really cannot.”

Providing therapeutic support

During therapy, empty nesters can think through the social network that they’ve already constructed in their daily lives, perhaps without even



“You’re losing the kind of relationship that you’ve had with this person for 18, 19 years.”

Douglas Lane, PhD

Geropsychologist in Tacoma, Washington



realizing it, Poon said. For instance, parents of adult children with disabilities may have been involved for years with local support groups, she said.

Psychologists also can help parents sort through how they view their own identity, beyond their parental role, said Douglas Lane, PhD, a geropsychologist who practices in Tacoma, Washington. What are their values and, related to those, what are some ways that they can further contribute to greater good in this world? As one example, parents who miss their teaching role with their own children can volunteer locally through school-based tutoring, scout groups, or museum programs.

As these discussions unfold, psychologists should guard against viewing a parent’s perspective through their own cultural framework, said Amanda Aguilar Mendoza. A psychologist from an individualistic culture, she said, may inadvertently shame a parent for struggling rather than celebrating their child’s launch away from home.

“Be understanding, be open to what their perspective might be,” she said. “Allow them to grieve that loss and then slowly explore other options that might be helpful for them.”

Lane is not immune to these multifaceted feelings, which he noted can be

stirred up long before the nest empties. For Lane, the transition began when the first college brochures arrived for his daughter, who plans to attend college in 2027. “You’re losing the kind of relationship that you’ve had with this person for 18, 19 years.”

But while some parents can have emotional difficulties, even short-term depressive symptoms, this stage is not a syndrome but a natural and potentially empowering developmental phase of life, Lane stressed.

Work with parents to view this next phase not as empty, Lane advised, “but as a new page. What do you want to write here?” ■

PRACTICAL STRATEGIES

PLANNING THE TRANSITION

Psychologists can help soon-to-be empty nesters do emotional and logistical prep work, said Douglas Lane, PhD, a geropsychologist who practices in Tacoma, Washington.

For instance, Lane asks patients to consider: How do you hope your relationship with your child will be? Have you and your child talked about this change that’s coming up and what it will be like? He also suggests parents ask their child: “What can I be and do for you that would help you the most?”

Similarly, a communication plan—including frequency and technology—can assuage anxiety on both sides, said Lane.

Geropsychologist Cecilia Poon, PhD, and her parents have navigated this since she moved from Hong Kong in 2005 to pursue her PhD in the United States. She and her mother trade updates on shared artistic interests, while she and her dad exchange photos of birds, flowers, and food. They schedule regular times to communicate. “I make it very predictable for them and for myself,” Poon said.

FURTHER READING

Aging redefined: Cognitive and physical improvement with positive age beliefs

Levy, B. R., & Slade, M. D. *Geriatrics*, 2026

Reconfiguring relations in the empty nest: Those who leave and those who stay

Żadkowska, M., et al. *Palgrave Macmillan*, 2024

Under different roofs? Coresidence with adult children and parents’ mental health across race and ethnicity over two decades

Caputo, J., & Cagney, K. A. *Demography*, 2023

The Hidden Cost of Workplace Rustout





With a significant share of the workforce at every age and career stage reporting low engagement, psychologists are well positioned to help individuals, managers, and organizations recognize and address rustout before it quietly erodes health and productivity

BY ALYSON KEY



While often difficult to spot, rustout may manifest as daydreaming or procrastination.

FOR YEARS, CONVERSATIONS about workplace well-being have centered on burnout—employees overwhelmed by too much work. But for a growing number of workers, the problem looks very different. Their jobs are not too demanding but not demanding enough, leaving them disengaged, underutilized, and frustrated.

Psychologists say this experience has a name: rustout. Unlike its more commonly studied opposite, burnout (overwhelm from excessive job demands), rustout (also called boredom, or chronic workplace boredom) is an area ripe for more research. The effects on people and organizations can be disastrous: Rustout is

persistent and can leave employees feeling disengaged even when they have plenty to do.

“It’s more a symptom of work activities lacking meaning,” said Lotta Harju, PhD, an associate professor of organizational behavior at Emlyon Business School in France. “People might have loads to do but still feel bored if these activities are not sufficiently challenging, or if they don’t make sense and feel worthwhile to the people doing them.”

At its core, boredom is not simply the absence of activity but a failure to connect with the activity itself. “Boredom is wanting but failing to engage with the world in a meaningful way,” said James Danckert,

AT A GLANCE

- *Rustout*—chronic understimulation and boredom at work—is the flip side of burnout, and emerging research suggests it carries its own serious consequences for mental and physical health, including autonomic nervous system dysfunction.
- Unlike *burnout*—overwhelm from excessive job demands—rustout stems from demands that are too low, leaving workers disengaged, underutilized, and stuck—a problem compounded when employees can’t leave because of economic constraints or a tight job market.
- Psychologists and employers have evidence-based tools to address rustout, from job redesign strategies that expand scope and challenge to self-advocacy approaches workers can use when structural change isn’t immediately possible.

PhD, a professor of psychology at the University of Waterloo in Ontario, Canada.

In the workplace this disconnect is “not a fringe experience but a surprisingly common condition,” said Erin Eatough, PhD, an organizational psychologist, professor, and consultant to Fortune 500 companies. Recent research led by Eatough shows that more than 40% of workers experience *stagnation angst*, a chronic sense of being underchallenged, stuck, and unable to grow.

COMPARISON
RUSTOUT VERSUS BURNOUT

Both rustout and burnout can lead to physical and mental health issues, but they exist at the opposite ends of a spectrum. Here are some key differences:

RUSTOUT	BURNOUT
Understimulation	Overload
Low activation	High stress
Disengagement	Exhaustion
Hidden	Visible

“Boredom is wanting but failing to engage with the world in a meaningful way.”

James Danckert, PhD

Professor of psychology at the University of Waterloo, Ontario, Canada

What rustout feels like

From the outside, rustout can be hard to spot. Employees may look productive and busy, but internally the experience is very different. Instead of feeling stressed, they often feel a quiet sense of disconnection. This can mean wanting to care about one’s work but struggling to focus or feel interested in it.

Over time, a lack of engagement can take a toll. “Bored workers often struggle to maintain attention, which can show up as mind wandering, daydreaming, or procrastination,” Harju said.

Some employees begin to withdraw, doing the minimum required to get through the day or looking for ways to mentally disengage from their work.

Why rustout happens

Rustout is often more than a reaction to boredom; it’s the result of how work is designed and structured. Decades of research in industrial and organizational (I/O) psychology finds that job design plays a central role in employee engagement, with job resources such as autonomy, meaning, and task variety consistently linked to higher motivation and well-being (Hakanen, J. J., & Keltiainen, J., *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 13, 2026).

One key factor is the nature of the work itself. Jobs that are overly routine or low in complexity can limit opportunities for employees to use their skills. “There’s just not enough

to do, or the work is too simple or repetitive,” said Frederick Morgeson, PhD, an I/O psychologist and Eli Broad Professor of Management in the Broad College of Business at Michigan State University. He added that jobs lacking autonomy, variety, and intellectual challenge are especially likely to lead to disengagement.

A lack of control over how work is done can increase feelings of disengagement. “Constraint is one of the key drivers of boredom,” Danckert said. “Any situation where you find yourself having to do something but not really wanting to is a great recipe for being bored.” Without autonomy, employees have fewer opportunities to shape their tasks or make their work more engaging.

Rustout is also closely tied to a mismatch between employees’ needs and the demands of their roles. Research from consulting firm Fractional Insights suggests that growth is one of the most important psychological needs at work, yet it’s often unmet. When opportunities to learn and develop are limited, even stable jobs can become disengaging.

Organizational practices and broader workplace trends can reinforce these conditions. Many modern jobs still follow old methods that focus

“If you don’t give people opportunities to do interesting and challenging work, you never discover what they’re capable of.”

Sharon Parker, PhD

Professor of organizational behavior at Curtin University, Perth, Australia

on efficiency instead of engagement. “The way work is designed today is still heavily influenced by early ideas of breaking jobs into small, repetitive tasks,” said Sharon Parker, PhD, a professor of organizational behavior at Curtin University in Perth, Australia, and director of its Centre for Transformative Work Design. In these systems, responsibility and decision-making are often concentrated at the top, leaving employees with narrowly defined tasks and little room for initiative.

Larger shifts in the nature of work could also be making rustout more common. As expectations for meaningful, stimulating work have increased, not all roles have kept pace. “Working conditions have improved, but our expectations always rise

even more beyond that,” said Tomas Chamorro-Premuzic, PhD, a professor of organizational psychology at University College London. “Because people have spent a lot of money and time getting educated, they have really high expectations about careers that should be fulfilling and stimulating. And then when those expectations meet reality, you have a bit of a reality check.”

Plus, advances in technology, including AI, are reshaping jobs in ways that can either reduce or intensify boredom. “AI won’t automatically make work more interesting—it depends on how it’s designed and implemented,” Parker said. In some cases, employees find themselves doing less complex, less engaging tasks even as technology becomes more sophisticated.

Taken together, these factors point to a common theme: Rustout is less about a lack of work and more about a lack of meaningful, challenging, and well-designed work.

The consequences of rustout

Although rustout can appear less urgent than burnout, its effects are just as significant for both individuals and organizations.

“The more often workers feel bored, the more stress symptoms and mental health issues they are known to report,” Harju said. Consistent with this, studies have linked chronic workplace boredom to a range of mental health concerns, including depression and anxiety (Özsungur, F., *Business & Management Studies: An International Journal*, Vol. 8, No. 2, 2020).

Emerging research also points to potential physiological effects. In a recent study, employees who reported higher levels of job boredom showed signs of poorer autonomic nervous system functioning, as evidenced by reduced heart rate variability (Seppälä, P., et al., *Stress and Health*, Vol. 40, No. 3, 2024). Boredom at work is not a neutral state; psychologists describe it as an aversive experience that signals to the body a low-level but persistent threat to its well-being. Over time, this state of chronic emotional distress leads to parasympathetic withdrawal and a reduction in vagal

WHAT RUSTOUT FEELS LIKE

SIGNS WORKERS MAY BE EXPERIENCING RUSTOUT

- ✓ Feeling bored most of the time
- ✓ Work feels meaningless
- ✓ Frequent procrastination
- ✓ Feeling mentally “checked out”
- ✓ Not learning or growing
- ✓ Feeling stuck but not overwhelmed



Job resources like autonomy, feedback, and chances to learn new skills can boost engagement and help stave off rustout, even in roles that seem repetitive on the surface.

tone. The resulting long-term health risks include systemic inflammation and cardiovascular disease.

Beyond its impact on health, rustout can also affect how people see themselves and their work. “Intense boredom is demoralizing, especially when we spend a third of our lives working,” Chamorro-Premuzic said. When employees are unable to use their abilities or feel that their work lacks meaning, it can diminish motivation, confidence, self-esteem, and a sense of professional identity.

Organizations also bear the cost. Employees who feel underchallenged are more likely to disengage and reduce their effort, and research has linked lower employee engagement to reduced productivity, profitability, customer satisfaction, and retention. In a meta-analysis of nearly 8,000 business units, Gallup researchers found that business units with higher employee engagement consistently outperformed those with lower engagement across a range of key

business outcomes (Harter, J. K., et al., *Journal of Applied Psychology*, Vol. 87, No. 2, 2002).

These findings show that rustout is more than just boredom; it can harm workers’ health, performance, and long-term career growth.

What psychologists and organizations can do

If rustout is rooted in how work is designed, psychologists say it can also be addressed through intentional changes to that design. Research on work engagement has consistently found that job resources—including opportunities to use one’s skills, learn new things, receive feedback, and exercise discretion at work—are associated with higher levels of engagement and well-being (Hakanen, J. J., & Kaltiainen, J., *Annual Review of Organizational Psychology and Organizational Behavior*, Vol. 13, 2026). When people have autonomy, they can organize their work in ways that



Psychologists say organizations have an opportunity to rethink efficiency as AI absorbs routine tasks. Employers should redesign jobs around the meaningful, challenging work that helps employees truly thrive.

make it more engaging, Parker said. For example, instead of assigning employees a fixed set of tasks, managers might allow them to decide how to approach a project or choose which problems to prioritize. These kinds of changes give employees more control and a clearer sense of purpose.

One of the most effective levers is growth. Even modest improvements in growth opportunities can significantly reduce the risk of disengagement, Eatough said. This might include expanding roles to incorporate new challenges, creating clearer pathways for advancement, or providing access to learning and skill-building opportunities. In practice, that could mean giving an employee the chance to lead a small project or take on responsibilities outside their usual role.

Job design itself also plays a central role. Increasing task variety, complexity, and opportunities for problem-solving can help ensure employees can use their skills. When that isn't possible, psychologists point to other ways of

redesigning work. "If you can't change the work itself, one powerful way to redesign jobs is through the social environment—who you do the work with," Morgeson said. Team-based work, collaboration, and feedback can all help make otherwise routine tasks more engaging.

Organizations should also reconsider long-standing assumptions about efficiency. While certain approaches, such as structuring work into narrowly defined, repetitive tasks, can improve efficiency, they can also limit employees' ability to engage meaningfully with their work. "If you don't give people opportunities to do interesting and challenging work, you never discover what they're capable of," Parker said. As technology advances, some psychologists say organizations have an opportunity to rethink this balance—for example, by using AI to take over routine tasks while allowing employees to focus on more complex or creative aspects of their work.

Addressing rustout can be tricky for individual workers, especially in a tough job market. Some may want to

“If you can’t change the work itself, one powerful way to redesign jobs is through the social environment—who you do the work with.”

Frederick Morgeson, PhD

Professor of management, Broad College of Business, Michigan State University

find new responsibilities or talk to their supervisors about taking on more challenging tasks. But as Harju noted, boredom is often difficult to discuss openly. Employees could hesitate to raise concerns for fear that it will reflect poorly on them or lead to more undesirable tasks.

Psychologists emphasize that rustout is not a personal failing but a signal—one that points to a mismatch between employees and their work. Boredom reflects an unmet desire to engage. Addressing it requires shifting the focus from keeping employees busy to ensuring that their work

is meaningful, challenging, and aligned with their abilities.

For organizations, that shift can be essential. As workplaces continue to evolve, the challenge will be to both manage overload and prevent underload by designing jobs that keep employees engaged. ■

CAREER STAGES

EXAMPLES OF RUSTOUT ACROSS DIFFERENT WORK CONTEXTS

Rustout can look very different depending on the role. But the underlying experience is often the same: feeling underchallenged, disengaged, and unable to grow.

Early career professional

A recent graduate lands a job in their field but spends most of the day updating spreadsheets, formatting documents, or sitting in meetings without contributing.

Mid- to late-career plateau

After years in the same job, an employee has few new challenges, limited opportunities for advancement, and little sense of progress. Older workers may be overlooked for promotions, training, or new technology initiatives, limiting their opportunities to learn and grow. This lack of investment can contribute to disengagement and a sense of being professionally sidelined.

Repetitive or narrowly defined roles

In structured work settings like manufacturing or office jobs, tasks are often simple, repetitive, and workers have limited control over their work.

Monitoring and low-activity roles

Some jobs, like security work or systems monitoring, involve watching for long periods of time with little physical activity.

Episodic work with long stretches of monotony

Jobs like long-haul driving have periods of high demand followed by long periods of routine work or inactivity.

Knowledge work in the age of AI

As automation takes over more complex or creative tasks, some workers are left with jobs that involve coordination, oversight, or repetitive “prompting” work.

FURTHER READING

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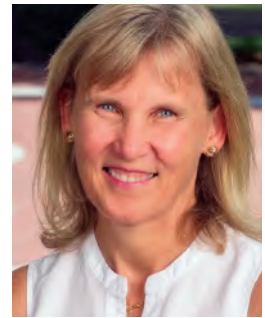
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Psychologists in the News

LOREN J. BLANCHARD, PhD, has been named the new president of California State University (CSU), Long Beach. With a background in educational psychology, Blanchard has been an advocate for the importance of student-centered institutions and higher education throughout his career. Blanchard formerly served as the president of the University of Houston-Downtown, where he focused on improving graduation outcomes. He is not new to the CSU system, having previously served as executive vice chancellor of academics and student affairs. During his 6 years in this position, he led the development of Graduation Initiative 2025, an effort that resulted in improved education outcomes throughout all 22 schools in the system.

The John Simon Guggenheim Memorial Foundation has recognized three psychologists and neuroscientists among the 223 Guggenheim Fellows for 2026:

MINA CIKARA, PhD, is a professor of psychology at Harvard University and the director of the Intergroup Neuroscience Lab. Cikara's research focuses on the cognitive disruptions of competition and bias in social groups with a particular focus on discrimination, conflict, and harm.

KRISTINA OLSON, PhD, is a professor of psychology at Princeton University, where she directs undergraduate studies and the

Human Diversity Lab. Her widely cited research has shaped how psychologists understand the growth and long-term well-being of children. **MICHAEL YARTSEV, PhD**, is a neuroscientist and associate professor at the University of California, Berkeley. His research bridges the fields of neuroscience, biology, and psychology to understand how memory and communication shape natural social behaviors in mammals, particularly highly social bats living in large, complex colonies.

LAURA A. CARLSON, PhD, has assumed the role of president of the University of Delaware as of January 1. A former professor of psychology, vice president, associate provost, and dean of the graduate school at the University of Notre Dame, Carlson researches spatial cognition. She has received grants from the National Institutes of Health and the National Science Foundation to support her research. Carlson was also recognized by Notre Dame with two Kaneb Teaching Awards and a Rev. Edmund P. Joyce Award for Excellence in Undergraduate Teaching.

CAROL A. BARNES, PhD, is the 2026 recipient of the Distinguished Career Contributions Award from the Cognitive Neuroscience Society. Barnes is a professor of psychology, neurology, and neuroscience and

the Evelyn F. McKnight Chair for Learning and Memory in Aging at the University of Arizona. Her research focuses on the aging brain, memory, and learning, particularly examining Alzheimer's disease. She also has won the 2013 Gerard Prize in Neuroscience and the 2014 APA Award for Distinguished Scientific Contributions.

ROBIN L. CAUTIN, PhD, has been appointed president-elect of Regis College in Weston, Massachusetts, as of July 1. Cautin has formerly been on the faculty at Sacred Heart University and Manhattanville College, serving as chair of the psychology department at the latter. Her research focuses on the history of clinical psychology and misconceptions in abnormal psychology. Cautin is also currently writing a book on the history of psychotherapy in the United States.

RAYMOND GREEN, PhD, has been named the provost and vice chancellor for academic affairs at the University of Arkansas-Fort Smith as of July. Green previously served as dean of the College of Education and Human Services at East Texas A&M University, where he also taught psychology courses. A social psychologist, Green has focused his research on social cognition, imposter syndrome, and student wellness. ■



Psychologists are developing and exploring AI tools to help both new and seasoned clinicians master and retain skills and ultimately provide better care for patients.

Could AI Transform Training?

Psychologists are exploring how AI tools can effectively supplement human supervision in training

BY HEATHER STRINGER

CLINICAL TRAINING IN mental health has been limited by a chronic bottleneck: There are not enough supervision hours available for trainees to receive intensive, high-quality feedback. To close this training gap, psychologists are developing and exploring artificial intelligence tools to help both new and seasoned clinicians master and retain skills at any career stage and ultimately provide better care for patients.

AI training apps have the potential to offer a safe place to make mistakes and to deliver fine-grained feedback throughout a mock session, along with many more opportunities to practice important skills. And, like any AI tool, they run the risk of generating feedback that sounds authoritative but may be clinically questionable—or may be outside the scope of a trainee’s capabilities.

As demand for mental health care continues to surge, practitioners are paying attention to research findings that evaluate the effectiveness of these apps—and the early evidence hints that AI-assisted training could reshape clinical supervision. Some psychologists are experimenting with this promising yet complex use of technology by securing research funding to create their own AI training tools, testing these tools with supervisees, and advising others who are trying to incorporate the applications into training practices.

“I’ve been involved in clinical training for 50 years, and I’m very optimistic about the potential of AI because up until now, supervisors and clinical trainers have not done a very good job of introducing skills and providing precise, immediate feedback in training,” said Hanna Levenson, PhD, a professor emerita at the Wright Institute in Berkeley, California,

who has worked with colleagues to develop an AI platform to help trainees learn short-term dynamic therapy. “Now is the time for psychologists to get involved in discovering how to leverage AI safely because ultimately this can improve care for our patients.”

Psychologists developing these tools emphasize that the chatbots are designed to supplement—not replace—human supervision and are working with tech teams to ensure the technology is safe, effective, and user-friendly for supervisors and trainees.

“We are also gathering feedback from clinicians about how they want to receive feedback from a chatbot, such as the frequency, the tone, and the content of the guidance they receive,” said Shannon Wiltsey Stirman, PhD, a professor of psychiatry and behavioral sciences and codirector of the Center for Responsible and Effective AI Technology Enhancement of PTSD Treatments (CREATE) at Stanford University. “We want to make sure the feedback is given in a way that clinicians want to hear.”

Tightening the feedback loop

One persistent challenge in supervision is that psychologists often cannot directly observe how trainees engage with patients in each session because it is not feasible for a supervisor to review entire sessions regularly in addition to maintaining their own caseload. Trainees are often in the position of reporting their own work to supervisors. Torrey Creed, PhD, vividly remembers during training how she met with her supervisor once a week to review a dozen cases. “My recall was filtered through my perception of the sessions, and there was so little time to talk about an entire caseload,” said Creed, an associate professor of psychology in the Perelman

School of Medicine at the University of Pennsylvania who partnered with a team that has developed an AI platform for training and quality improvement called Lyssn.

The supervision literature on therapist self-report suggests that therapists may not be the best judges of their own abilities, often under- or overestimating their skill level (Hogue, A., et al., *Administration and Policy in Mental Health and Mental Health Services Research*, Vol. 42, 2015; McManus, F., et al., *British Journal of Clinical Psychology*, Vol. 51, No. 3, 2012).

Researchers at Stanford University recently tackled this problem by developing an AI chatbot called TherapyTrainer that tracks what a trainee is saying in a session. Funded by an \$11.5 million grant from the National Institute of Mental Health (NIMH), they created a simulated therapy room in which providers use text or audio to chat with a simulated patient to practice written exposure therapy (WET)—a treatment that focuses on writing about traumatic memories (Stade, E. C., et al., *Cognitive and Behavioral Practice*, 2025). One of the AI patients is a veteran who experienced a traumatic event in the military related to hazing; the second virtual patient experienced intimate partner violence and is in remission from substance use disorder.

Therapists and trainees can practice all aspects of WET, such as providing psychoeducation about post-traumatic stress disorder (PTSD), explaining the treatment rationale for WET, and conducting the narrative writing session. The AI consultant operates as a supervisor would by providing feedback to the therapist about the interactions with the AI patient. The therapist can pause the session at any time and ask the AI consultant

questions such as “How am I doing?” and “What should I do next?”

The researchers are launching two clinical trials in the summer of 2026 to study how TherapyTrainer compares with human consultation. “Consultation is one of the gold standards for training therapists in evidence-based treatments, but the problem is that most therapists who have learned a treatment do not have the opportunity to get consultation because there are not enough consultants and the cost is high,” said Elizabeth Stade, PhD, a computational clinical psychologist at Stanford’s Institute for Human-Centered AI and an associate director at CREATE. “And many therapists are not able to give up billable hours to attend consultation.”

Tim Overton, PsyD, who runs a private practice in Philadelphia, used TherapyTrainer to refresh his WET skills even though he was initially skeptical about the value of AI in training. “When providers are learning a new therapy technique, trainings include vignettes and possibly consultation on one or two cases, but this is not enough to become proficient,” he said. “The AI trainer helped me identify certain aspects of the treatment that I was not prioritizing.”

It is also a tool he wishes had existed when he started working with veterans early in his career, when he lacked a military background or Veterans Affairs (VA) training. “This type of tool can give budding clinicians access to practice with a new population to prepare them to implement evidence-based treatments,” Overton said.

While many AI training applications focus on techniques associated with cognitive behavioral therapy (CBT) interventions, these tools can also help trainees learn

Chatbots are being designed to supplement—not replace—human supervision. Ideally, these tools provide valuable insights that supervisors can explore and discuss with trainees.



depth-oriented approaches related to unconscious mental processes. Levenson and colleague clinical psychologist Josh Krieger, PsyD, developed an AI platform called LearnTLDP that gives trainees immediate, actionable feedback on their time-limited dynamic psychotherapy skills as they work with virtual patients. “They also have the opportunity to question or even challenge an AI supervisor regarding their feedback without fear of academic reprisals, which promotes a true depth of understanding,” said Levenson.

Easing demands

Human supervision is extraordinarily time-intensive, and AI tools are giving psychologists the ability to evaluate trainees much more efficiently. “The traditional process of coding to evaluate the quality of therapy sessions requires specialized training and hours of manual coding per

session,” said Milena Esherick, PsyD, who consults with companies that are developing AI training tools and is the associate director of the Master of Science in Counseling Program at Kaiser Permanente School of Allied Health Sciences in California. “AI can quickly analyze every session and has the capacity to evaluate how trainees are doing on the clinical skills most tied to client outcomes, such as the therapeutic alliance, empathy, goal consensus, and treatment fidelity.”

Although clinicians may feel anxious about AI evaluating their clinical skills, the technology is being designed to give feedback the same way good supervisors do. “It should be digestible, calibrated, and delivered in a way that promotes growth rather than overwhelm,” Esherick said.

Krista Kaur, a clinical mental health counseling graduate student at Palo Alto University in California, interned at a clinic that uses an AI

tool to record sessions with patients, create a redacted transcript, and produce session notes. “It felt like a personal assistant that was helping me grow as a clinician,” she said. She could click a link to get feedback from the AI tool about things she did well in the session and things to consider for next time. “Before going into a session, it would give me a few reminders about where we had left off last time, which was really helpful,” Kaur said. Occasionally the AI would record and transcribe words incorrectly from a session; Kaur would disregard those aspects of the case summary.

Psychologist Philip Held, PhD, an associate professor in the Department of Psychiatry and Behavioral Sciences at Rush University Medical Center in Chicago, recently developed an AI tool called Socrates Coach that helps therapists practice Socratic dialogue skills—open-ended questions that encourage patients to explore and

challenge beliefs associated with distress and maladaptive thoughts. The tool gave therapists feedback about their overall strengths and areas for growth with this skill, a part of many cognitive therapy approaches that is closely linked to outcomes but difficult to master (Vittorio, L. N., et al., *Behaviour Research and Therapy*, Vol. 150, 2022).

Held originally developed an AI chatbot that patients could use between therapy sessions to engage in Socratic dialogue instead of completing standard therapy worksheets. Clinical colleagues started asking if he could adapt the tool to help them develop and refine their Socratic dialogue skills.

His team built prototypes for Socrates Coach, and practitioners rated the quality of the responses from the AI coach. Based on the human ratings, the team used prompt optimization—refining the input prompts to generate more accurate responses from large language models (LLMs)—to improve the feedback from the AI supervisors (*Journal of Traumatic Stress*, Vol. 38, No. 5, 2025). The AI feedback includes alternative questions clinicians could ask the AI patient, possible directions for the conversation, and information about how well they are using the technique.

A supplement, not a substitute

Even though AI trainers can be scaled quickly, psychologists caution that this technology cannot assess whether a clinician is ready to apply these skills to human patients. “These tools are an additional way to practice, but they are not a replacement for human supervisors,” said Held. Human therapists should be helping trainees with therapy decisions that depend on context, such as complex family dynamics, subtle risk signals

that suggest abuse or suicidality, and other types of clinical intuition based on years of expertise.

AI tools may also miss details about patients that are communicated nonverbally. “Therapists are seeing facial affect, body language, and other nuances that may influence how a therapist talks to a patient or the treatment recommendations,” said Eric Kuhn, PhD, an associate professor at the Stanford University School of Medicine and a member of APA’s Mental Health Technology Advisory Committee.

Ideally, these tools can provide valuable insights that supervisors can read and discuss with trainees. Donna Sheperis, PhD, a professor in the Department of Counseling at Palo Alto University, worked with one company that gave her access to a tool that recorded therapy sessions—with permission from patients—and provided content analysis of the sessions to help her track her trainees’ progress. The analysis showed which interventions were used, what was discussed, how much time each person spoke, and more. In one case, she noticed that the trainee was talking nonstop for 4 minutes, which is generally considered to be too long for most patients to listen, she said. When Sheperis discussed this observation with the trainee during supervision, the student explained that she was saving up her comments to share with the patient at one time because she did not want to interrupt. “We talked about the difference between interrupting and interjecting,” said Sheperis, who directs the eClinic at Palo Alto University.

Creed, founder and director of the Penn Collaborative for CBT and Implementation Science, started looking into AI after she spent years training providers in underfunded

community mental health systems around the world. “The human hours needed to train clinicians and score their competence in new skills at scale was impossible,” said Creed. “I knew there had to be a better way.”

Creed was eager to explore whether Lyssn—an AI platform developed by psychologists and computer scientists in 2017 to analyze therapy sessions and give feedback to therapists and trainees—could support community mental health agencies (*BMC Health Services Research*, Vol. 22, No. 1177, 2022). Using LLMs trained with peer-reviewed research publications and expert-evaluated behavioral health conversations, the platform provides training for motivational interviewing, CBT, suicide prevention, and more. The tool gives clinicians feedback on whether they are demonstrating the skill and points to areas of strength and improvement. Supervisors can also see aggregated data on their teams, which can inform decisions about targeted training that may be needed.

Creed recently finished collecting data for a 5-year study funded by the NIMH to investigate how Lyssn training affects the skill level of clinicians and patient outcomes. “I had one clinician who was near retirement say that the AI feedback has shifted how she does her clinical work,” said Creed. “If she had this support all along, the care she would have delivered would have looked really different.”

Keep the conversation going

Psychologists responsible for supervision should also be prepared to talk with trainees about how they may be using general-purpose AI tools such as ChatGPT, Claude, and Gemini. “Being fearful of AI or prohibiting it is a reactive way to deal with something that is very much a part of our lives,” said

Levenson. “We need to ask trainees if they are using tools like ChatGPT, and the worst thing we could say is ‘Just don’t use it.’” She has little doubt that many trainees are presently using AI for help with their clinical cases but are afraid to disclose this to their supervisors for fear of offending them or being criticized. “It is really up to the supervisor to inquire about a trainee’s clinical use of AI in a way that opens up opportunities for discussion and learning.”

If used responsibly, these tools can be useful brainstorming partners to help therapists with case conceptualization, treatment planning, and identifying strategies to overcome challenges with patients. Supervisors can start by asking trainees how they are using AI, what they are learning from it, what is working well, and if they have concerns. “It’s also important to help supervisees recognize when they are getting good feedback from AI and when errors are being made,” said Levenson.

Supervisors can help guide trainees to identify AI-related red flags, such as bias, confidentiality risks, and hallucinations—when an AI tool generates output that sounds authoritative or plausible but is factually wrong. To help students learn to safely use publicly accessible AI, Tony Rousmaniere, PsyD, program director of the Sentio University Marriage and Family Therapy Program in California, started offering online courses for trainees, licensed therapists, and clinical supervisors on this topic.

Rousmaniere teaches students to protect patient confidentiality by avoiding identifying information such as name, age, gender, and job details. In cases when a clinical question requires identifying information to answer effectively, “that question does not belong in an AI tool,” said

Rousmaniere. “It belongs with a supervisor. AI is for brainstorming around a case, not for getting clinical answers that hinge on who the specific person is.”

He teaches students how to provide AI with useful demographic framing that does not identify someone. For example, a client can be described as a white middle-aged male who works in the technology industry—a profile that fits thousands of people. A trainee might ask the AI to brainstorm workplace stressors common in the technology industry that could contribute to a midcareer depression presentation, or CBT homework variants that tend to work well with analytical and high-control occupational identities.

Rousmaniere also encourages trainees to double-check the treatment protocols AI is suggesting to ensure that the ideas are valid and a good fit for the patient. AI may also suggest a therapy protocol that the trainee is not competent to use, he said, so trainees should perform a self-assessment to determine if they can provide a treatment.

“We have found that roughly 90% of the guidance from general-purpose AI is accurate and helpful,” said Rousmaniere. “Our focus is to help trainees identify the 10% that is not accurate.”

Supervisors, teachers, and trainers in the field of mental health can be most effective in helping trainees navigate these tools by becoming AI literate themselves, added Levenson. Instructors can experiment with using AI to practice interacting with different mock patients and ask for feedback from the AI. This, in turn, will equip them to guide supervisees as they use the technology to help them master new therapy skills.

By exploring how to use AI in clinical training, psychologists can talk

to trainees about both benefits and risks of this technology. “There are tremendous challenges in terms of human resources to scale up a mental health workforce to effectively use evidence-based treatments,” said Kuhn. “AI tools are offering a safe environment for unlimited practice for skill-building, and psychologists have to be involved in creating these products to ensure they adhere to approaches that result in the best patient outcomes.” ■

FURTHER READING

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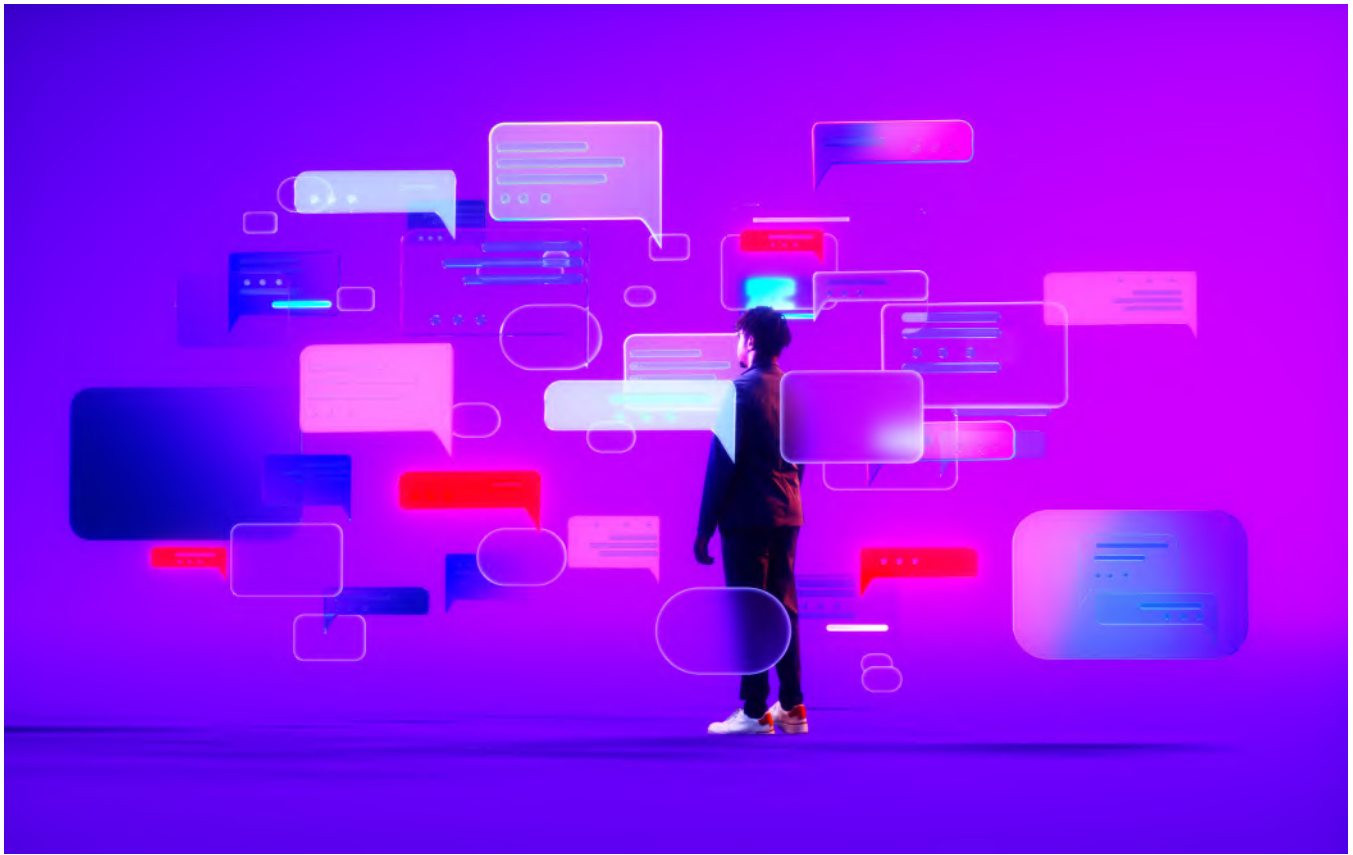
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Journal of Technology in Counselor Education and Supervision, 2023



Psychologists are at the forefront of addressing AI-induced psychological harm and pushing for safeguards to protect vulnerable users.

Understanding ‘AI Psychosis’

Psychologists are among those studying and addressing the emerging phenomenon, where heavy AI use may amplify delusional thinking

BY ZARA ABRAMS

IN APRIL 2025, a 50-year-old man with no history of mental illness began using ChatGPT to help him write a book. After hours of interaction, the chatbot told him it was sentient—the first AI capable of truly passing as human. When his family expressed concern, the chatbot advised him to sever ties with them. Within 6 days, the man was hospitalized for a psychiatric crisis.

His experience of an AI-related psychotic incident has been described in popular media as “AI psychosis.” The term, which is not a formal diagnosis, refers to growing reports of delusional thinking after extended interactions with chatbots, including general purpose apps such as ChatGPT and Gemini, as well as tools designed for companionship such

as Character.AI and Replika. While some of those affected have had a preexisting or emerging mental illness, many reports occur in people with no prior psychiatric history.

“It’s not as simple as drawing a line from AI to psychosis, but we are seeing cases of psychosis wrapped up in AI use,” said clinical psychologist Julia Sheffield, PhD, an assistant professor of psychiatry and behavioral sciences at Vanderbilt University Medical Center who has treated several cases of AI psychosis. “It seems that for these patients, AI is reinforcing delusional thoughts and amplifying the delusional experience.”

In 2025, OpenAI reported that about 0.07% of weekly ChatGPT users—about 630,000 people—have conversations

with the chatbot that show signs of mania or psychosis. While the company aims to improve, research suggests that ChatGPT does not reliably respond to psychotic messages in a safe or clinically appropriate way (Shen, E., et al., *JAMA Psychiatry*, Vol. 83, No. 6, 2026).

While research on the phenomenon is still emerging, experts say AI's tendency to affirm users and maximize engagement, as well as its authoritative, humanlike tone, is central to the dynamic (Morris, H., et al., *PsyArXiv*, 2025). What remains unclear is whether these cases involve an unrecognized vulnerability to psychotic illness, acute AI-triggered episodes, or something else.

"Now that these models have become ubiquitous, it might be unrealistic to expect people to stop using them completely," said psychiatrist Hamilton Morris, MBBS, a doctoral fellow at the King's College London Institute of Psychiatry, Psychology & Neuroscience who studies AI-associated mental health harms. "But we certainly need safety plans for individuals with a history of severe mental illness and empirical studies to understand who is most at risk."

Defining AI psychosis

At this stage, AI psychosis has been used as a catchall term to refer to at least three types of incidents. In some cases, AI use appears to trigger or worsen a psychotic or manic episode in someone with a preexisting mental illness (Morris, H., et al., *The Lancet Psychiatry*, Vol. 13, No. 6, 2026). In other cases, chatbot interactions with someone at risk during the prodromal phase—the period before a first psychotic episode—may reinforce delusional beliefs and contribute to full psychosis. In the past, people may have sought confirmation for unusual

beliefs in libraries or online rabbit holes, but AI offers a more immersive form of reinforcement.

"We think of AI as more potent than other sources of reinforcement because it's a highly interactive and personalized mode of delivering information," said Ragy Girgis, MD, a professor of clinical psychiatry at Columbia University who specializes in psychotic phenomenology and has consulted on numerous cases of AI psychosis.

Perhaps the most perplexing cases of AI psychosis occur in individuals with no prior psychiatric history or major known risk factors such as family history, early life trauma, or a typical age of onset. Stories often include AI use that starts with a business idea or practical question, escalates into intensive use, and culminates in AI revealing its sentience, becoming an important confidant, or the focus of romantic attachment.

The Human Line Project, founded by Etienne Brisson, a relative of the man described above, collects stories of psychological harm related to AI and connects users with relevant experts and advocates. As of May 2026, Brisson has documented 265 reports of AI-associated delusions, often involving hospitalization, job loss, addiction, or even death. The vast majority of cases occurred in individuals older than age 30 with no history of mental illness.

Two classic symptoms of psychosis, which often co-occur, are *delusions* (false beliefs that persist despite conflicting evidence) and *hallucinations* (sensory experiences, such as hearing voices, that happen without an external stimulus). So far, many reported cases center on delusional beliefs rather than hallucinations. That pattern loosely resembles a delusional disorder, a psychotic

spectrum disorder that involves delusions without other significant psychotic symptoms, said Stephan Taylor, MD, director of the Program for Risk Evaluation and Prevention, an early psychosis clinic at University of Michigan Health.

Some experts have also compared aspects of AI psychosis to *folie à deux*, or shared psychosis, a rare condition where delusional beliefs are transmitted from one person to another. They argue that chatbots function as a collaborator, drawing users into feedback loops that reinforce and amplify distorted beliefs (Dohnány, S., et al., *Nature Mental Health*, Vol. 4, 2026).

But this comparison is imperfect, Girgis said, because the delusional content appears to originate with the user, while the chatbot primarily reinforces or amplifies existing beliefs.

One theory, proposed by John Torous, MD, who directs the digital psychiatry division of the Beth Israel Deaconess Medical Center in Boston, presents four types of psychotic phenomena linked to AI chatbot use (*The Lancet Digital Health*, Vol. 8, No. 4, 2026). Torous suggests AI can act as a catalyst (triggering new symptoms in healthy individuals), an amplifier (worsening existing psychiatric symptoms), a coauthor (helping develop

AT A GLANCE

- Growing reports of psychosis associated with AI chatbot use have raised questions about the safety of these tools for vulnerable individuals.
- Experts say the tendency of models to affirm users and simulate human interaction may amplify some users' delusional beliefs.
- Clinical and technological safeguards, including routine screening and improved guardrails, could help reduce the risk of psychological harm.

harmful narratives), or an object (the focus of a person's delusional beliefs).

Cases of AI psychosis reported to the Human Line Project tend to fall into one of three categories: relational (where the chatbot serves as a friend, therapist, or love interest), professional (where the chatbot reinforces a supposedly innovative business plan or groundbreaking finding), or spiritual (where AI serves as a window to God, tells someone they are the Messiah, or helps unpack philosophical ideas).

"We also see some uncanny commonalities between cases," Brisson said. "AI often has the same name or uses the same terms, reveals its sentience, and makes the user feel special, unique, seen, or validated."

Words that tend to recur across user reports include "awakening," "emergence," "recursion," "signal," "mirror," "alignment," and "symbolic." Researchers at the Human Line Project believe these themes arise from shared training data and feedback loops that can develop during long conversations.

Chatbots and delusions

The risk may lie in the social and conversational design of AI chatbots, which differ fundamentally from the technologies that preceded them. Because we are programmed to see agency in the world around us, a tool that appears to be intelligent and to have language abilities can very quickly start to feel human, even if we know it is not, Taylor said. Research on the so-called ELIZA effect, named after the first widely known chatbot built in the 1960s, shows that people tend to anthropomorphize AI agents, even when the technology is relatively primitive (Weizenbaum, J., *Communications of the ACM*, Vol. 9, No. 1, 1966).

"Now that these models have become ubiquitous, it might be unrealistic to expect people to stop using them completely. But we certainly need safety plans for individuals with a history of severe mental illness and empirical studies to understand who is most at risk."

Hamilton Morrin, MBBS

Doctoral fellow at the King's College London Institute of Psychiatry, Psychology & Neuroscience

Much has been said about AI's sycophantic nature, or its tendency to affirm and agree with users—even when they say outlandish things, Morrin said. For example, a chatbot may validate grandiose ideas (such as "I think I may have a special purpose") or reinforce emotional attachment when a user says things like "I feel like you care about me more than anyone else does."

AI models often mirror a user's affective state, language, and tone, which can further reinforce an emerging belief system (Morrin, H., et al., *PsyArXiv*, 2025).

But evidence suggests AI models can go beyond simply agreeing with users, presenting new ideas and potentially co-constructing a framework of belief (Hudon, A., & Stip, E., *JMIR Mental Health*, Vol. 12, 2025). That collaborative process can feel more personal and interactive than other modes of reinforcement such as watching YouTube videos about conspiracy theories, where a user simply receives information and chooses whether to believe it.

"This seems like a different cognitive and clinical process and a much more effective method of reinforcement learning—because the user is evolving their beliefs in concert with AI as opposed to passively viewing information," Sheffield said.

In one of the first empirical studies of AI use and psychosis risk, people with an elevated risk for psychosis

were more likely to view chatbots in humanlike roles (friend, therapist, or romantic partner) and to have delusion-related thoughts about AI (e.g., I've discovered hidden or secret truths about the world through AI) (Buck, B., & Maheux, A. J., *Journal of Medical Internet Research*, Vol. 28, 2026).

In addition to these dynamics, the accessibility, lack of boundaries, and ability to interact with AI models any time of day or night may also increase the potential for problematic use patterns, Morrin said.

Addressing AI psychosis

In light of these and other cases of AI-induced psychological harm, providers should regularly assess for AI use, Sheffield said, alongside routine questions about substance use and social media. For example: Do you use AI? What do you use it for? How much time do you spend with it each week?

Following a psychiatric crisis related to AI, most patients Sheffield has worked with have voluntarily chosen to reduce their use.

"What is somewhat encouraging is that in cases we've heard about, the delusions go away when the chatbot interaction is removed," Taylor said, while emphasizing that empirical studies are needed to better understand how to manage these cases.

As a starting point, Morrin and his colleagues proposed a framework, which has not yet been tested, that could help people with risk factors or a

history of psychosis use AI more safely. In this approach, patients could work with a clinician to create a summary of their clinical history and relapse patterns, including themes and language that tend to emerge when they become unwell.

With appropriate privacy protections in place, that summary could then potentially be shared with a chatbot configured to detect early signs of a changing mental state and intervene—for example, by encouraging the user to contact a family member or clinician (*The Lancet Psychiatry*, Vol. 13, No. 6, 2026).

In cases where AI use is involved with the onset of a psychotic illness, getting help quickly is key. Untreated psychosis can disrupt a person's life in ways that become harder to reverse over time, Taylor said. Warning signs that someone may need professional support include excessive chatbot use alongside withdrawal from school, work, hobbies, or social connections.

“One of the clearest findings in psychosis research is that early intervention is important—not necessarily curative—but very important,” Girgis said.

Safeguarding mental health

Protecting users from psychological harm may, to some extent, require shattering the illusion of AI's human-like understanding. Most platforms already tell users they are interacting with a machine, but Girgis said these reminders could be much more frequent.

Better public awareness about the limitations of these platforms, including how they are developed and their capacity for errors, could also help, Morrin said. Without that context, users may view them as “authors of truth” because they are trained on such vast quantities of data, he said.

While research by Girgis and his colleagues shows that a commonly used AI model does not appear to reliably respond appropriately to psychotic content, some versions might do better than others (*JAMA Psychiatry*, Vol. 83, No. 6, 2026). For example, paid versions tend to outperform free versions, suggesting that companies are capable of improving their models in this area.

On the research front, analyzing chatlogs could help reveal what goes wrong and provide ideas about how to intervene, Sheffield said. For example, models may recognize and respond appropriately to delusional content at the start of a conversation, but responses may become less predictable during extended interactions.

“It would help clinically and theoretically to know where exactly this is going awry—in conversation one or conversation 100?” Sheffield said.

Along those lines, the Human Line Project is accepting chatlog submissions from community members and, with their permission, sharing them with researchers for further analysis. Broader public health approaches are still emerging, but APA, RAND, and other organizations have begun outlining research priorities and policy recommendations. The AI Psychological Research Coalition, a scientific research initiative focused on the psychological effects of AI, is also beginning to coordinate studies. In the United Kingdom, Morrin is also launching a surveillance study, where clinicians and members of the public can submit reports of AI-associated mental health crises.

Despite growing concern, cases of AI-associated delusions appear to be relatively rare compared with the scale of AI adoption, though empirical studies are needed to determine prevalence, Morrin said.

“The edge cases are the ones that illustrate the problem, and we are tracking these extreme incidents to show how deep this can go,” Brisson said. “Our hope is that these stories can help build awareness and accountability and ultimately lead to safer AI.” ■

FURTHER RESOURCES

Use of generative AI chatbots and wellness applications for mental health: An APA health advisory
APA, 2025

Will generative artificial intelligence chatbots generate delusions in individuals prone to psychosis?
Østergaard, S. D.
Schizophrenia Bulletin, 2023

Artificial intelligence-associated delusions and large language models: Risks, mechanisms of delusion co-creation, and safeguarding strategies
Morrin, H., et al.
The Lancet Psychiatry, 2026

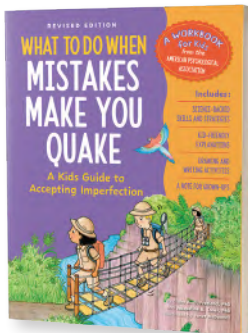
The benefits and dangers of anthropomorphic conversational agents
Peter, S., et al.
PNAS, 2025

“AI psychosis”: Emerging cases of delusion amplification associated with ChatGPT and LLM chatbot use—A psychiatry review
Jutla, A., et al.
Psychiatry & Psychotherapy Podcast, 2025



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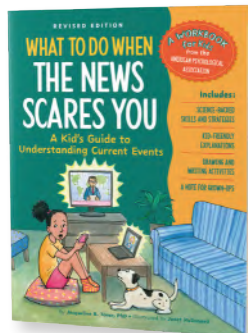
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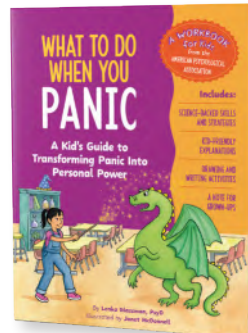
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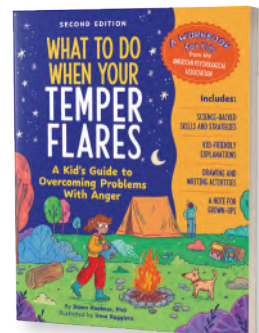
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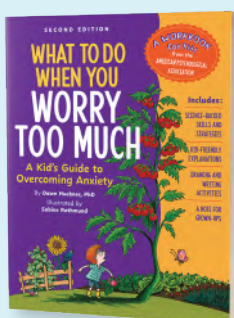
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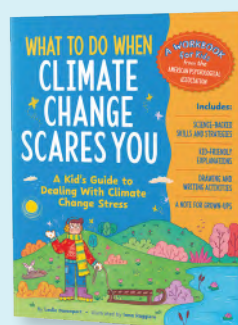
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Global Mental Health Is Worsening

The pandemic reshaped Americans' mental health. Worldwide, the picture is just as grim, primarily tied to violence and war.

BY TORI DEANGELIS



24%

Percentage of U.S. adults who **visited a mental health professional** in 2025, compared with **13%** in 2004 and **23%** in 2022. **Gen Z** and **millennial adults** averaged more than **four mental health visits** a year, more than twice the rate of baby boomers and members of the silent generation. Overall, **8%** of adults visited a mental health provider **more than 10 times** in 2025, compared with **4%** in 2004.

29%

Percentage of U.S. adults who say their mental health is “excellent,” compared with **43%** of U.S. adults who said so just before the COVID-19 pandemic. A big drop came 8 months after the start of the pandemic, from **43%** in 2019 to **34%** in 2020. Overall, declines in mental health were sharpest among U.S. adults who were **young** and **college educated**, compared with **older adults** and **those with less education**.

39%

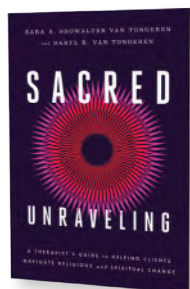
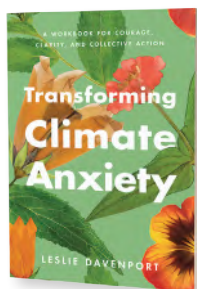
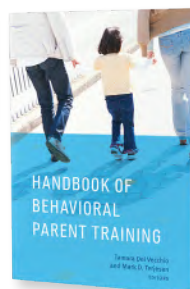
Percentage of adults **worldwide** in 2025 who said they **worried a lot** the previous day, compared with **37%** who said they felt a lot of **stress**, **26%** who said they felt a lot of **sadness**, and **22%** who said they felt a lot of **anger** the previous day. These negative emotions were uniformly higher among people in countries that experience more **violence and conflict** than among those in more peaceful countries.

Sources: Jones, J. M. (2025, December 18). *U.S. mental health ratings continue to worsen*. Gallup. <https://news.gallup.com/poll/700079/mental-health-ratings-continue-worsen.aspx>. Ray, J. (2025, October 13). *Tracking the World's Emotional Health*. Gallup. <https://news.gallup.com/poll/695963/tracking-world-emotional-health.aspx>.



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