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monitor on psychology

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MONITOR ON PSYCHOLOGY | MARCH 2019

GENETICS 2.0

What can this baby's DNA tell us about his future? And how will inexpensive genetic testing change psychological research?

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From Author
Samuel O. Ortiz, Ph.D.

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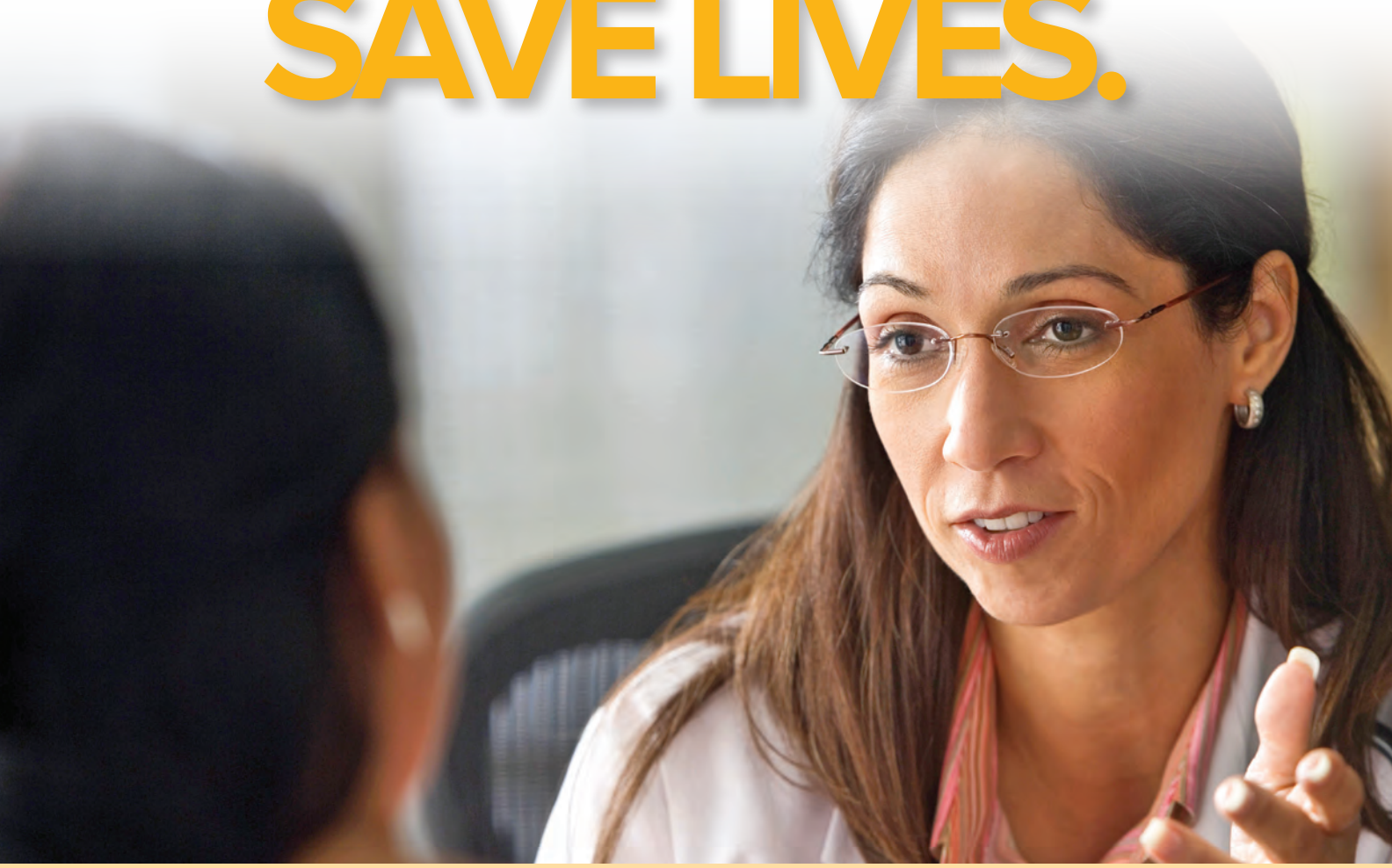

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BPA WORLDWIDE

COVER STORY

WHAT CAN WE LEARN FROM OUR DNA?

Thanks to advances in genetic testing technology, we may soon be able to know, at birth, something about a child's risk for developing nearly every known psychological and physical trait and illness over a lifetime. As researchers explore the promise this holds for psychological research—including designing new interventions and treatments—others are concerned about overhyping its significance, and about the societal and ethical implications of such widespread genetic testing. *See page 38*

COVER: JAROSLAW WOJCIK/GETTY IMAGES

IMPROVING MENTAL HEALTH FOR INMATES

Psychologists have become a driving force behind new approaches in state and federal correctional facilities that improve care for inmates and work to keep people with mental health problems out of such facilities in the first place. Here is a look at some of the latest evidence-based programs. *See page 46*

Departments

Support for sexual diversity in South Africa. Page 20

Research explores insect culture. Page 14

CE CORNER

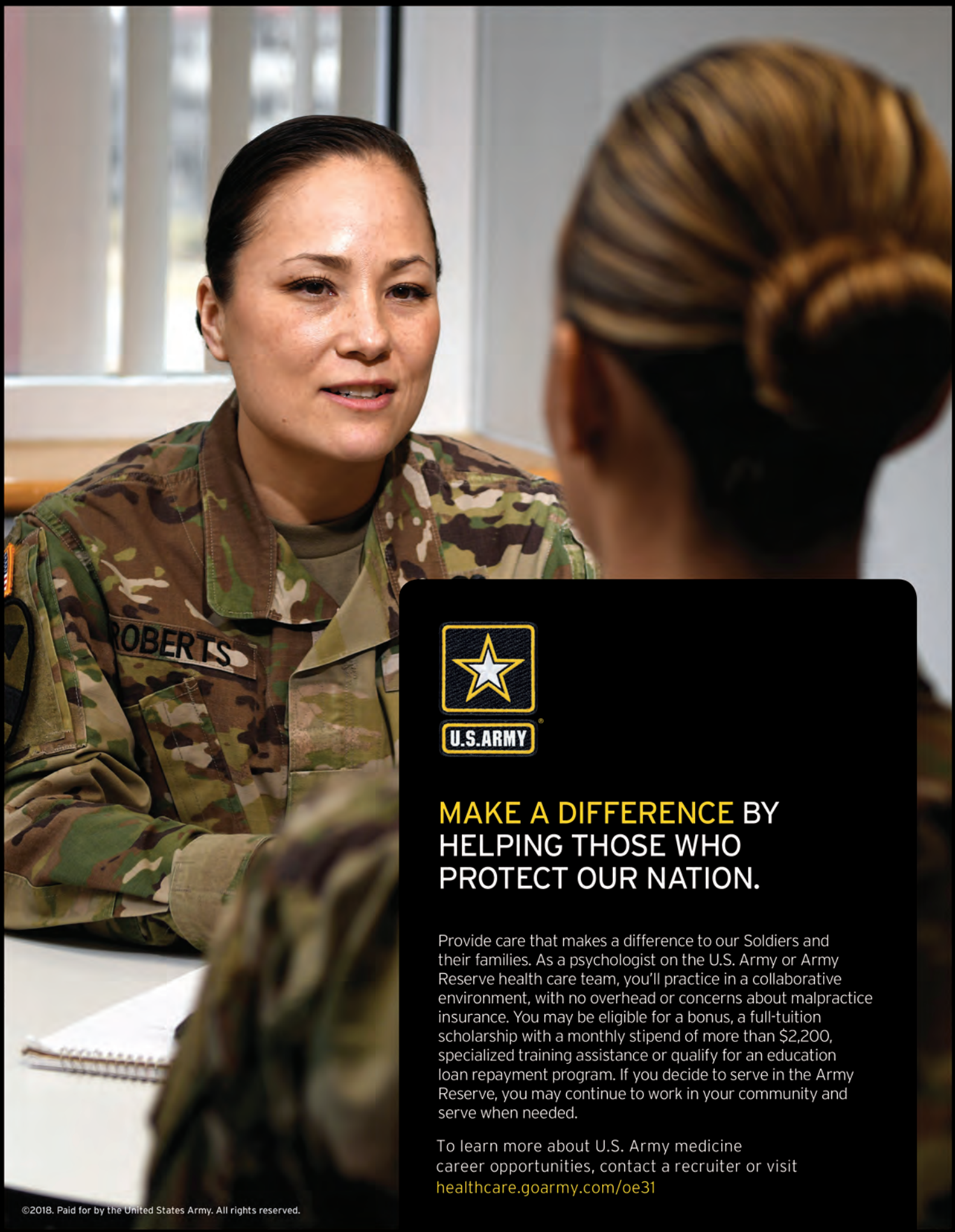
HOW DOES IMPLICIT BIAS BY PHYSICIANS AFFECT PATIENTS' HEALTH CARE?

Psychologists are among the researchers who are exploring how specific factors, including physicians' use of patronizing language and patients' past experiences with discrimination, influence health care. Research is also looking at how implicit bias affects care for patients with certain diseases, such as cancer and diabetes. *See page 32*

PSYCHOLOGISTS ON THE TEAM

"Dr. Jaglom taught me that there is a lot more to medical care than treating the physical illnesses."

Jennifer Favre, MD, MPH, pediatrician at East End Pediatrics, East Hampton, N.Y. See page 60



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USING PSYCHOLOGICAL SCIENCE TO BUILD A MORE INCLUSIVE SOCIETY

Let's tap the legacy of Olivia Hooker to bring people together

BY ROSIE PHILLIPS DAVIS, PhD, APA PRESIDENT

We can learn so much from the pioneering spirit of Dr. Olivia Hooker, who died in November at age 103. The oldest living survivor of the Tulsa Race Riot, Dr. Hooker was just 6 years old when in 1921 a group of white individuals, believed to be Ku Klux Klan members, burned and plundered "Black Wall Street," leading to the deaths of as many as 300. Not only did Dr. Hooker survive that violent attack, her strength and resilience led her to be the first black woman to enlist in the Coast Guard, to earn a psychology doctorate at the University of Rochester and to become a distinguished psychology professor at Fordham University, esteemed for her research on the learning abilities of children with Down syndrome.

Yet it's one of her lesser-known accomplishments that provides us with a compelling example of how psychological science can help us heal divides and become a more caring and inclusive society: When Hooker learned about women in an upstate New York jail who had been cast aside, labeled as having severe learning disabilities, she used her psychological training to re-evaluate the women's abilities. That enabled these women to pursue additional education and better jobs and to become more integrated into society.

APA President
Dr. Rosie Phillips Davis

JOHN DAVID PITTMAN

Dr. Hooker's efforts in this area demonstrate how psychological science can help us overcome the human tendency to divide people into groups of "us versus them."

Today, many Americans are experiencing societal divisions based on fear. Hate groups, often centered on a community of people with immutable characteristics around race and religion, have been on the rise. Decades of psychological science can help society understand this fear, including research by John Dovidio, PhD. Along with his colleagues at Yale University, Dovidio explored the tendency of humans to form in-groups to feel a sense of belonging and security. Out-groups can spark fear and insecurity—a fear that can sometimes make us want to destroy, control or at least separate from the "other."

If we want to live in an inclusive, strong and caring society, then we can turn to the expertise of psychological scientists in APA to tell us how to do it.

I call on applied scientists, academic researchers and experts in multiculturalism to step up and continue to show us how to turn out-groups into in-groups. Remember: Exclusion is easy, but inclusion is power. ■

RESEARCH WITH NONHUMAN ANIMALS

I am writing regarding former APA President Antonio Puente's column "The Importance of Research with Nonhuman Animals" (October 2017). Given that nonhuman animals are, like humans, sentient beings who experience fear and pain, how can we justify subjecting them to experiments that certainly cause them fear and pain? Simply because we have the power to do so? Yes, the findings of research done on nonhuman animals may benefit humans, but does that make such research morally right?

APA, which should be the standard-bearer of ethics for psychologists, should not justify and support inflicting psychological suffering on other sentient beings.

Michael Radkowsky, PsyD
Washington, D.C.

ORDER IN THE COURTS

Thanks for the January article on Jason Cantone ("Improving Order in the Courts") and the Federal Judicial Center. It was revealing and oh so very relevant.

Harriet E. Heath, PhD
Winter Harbor, Maine

OUR FAVORITE TWEETS

Re: "Becoming a Great Mentor" (January)
@MLSteinberg Mentoring PhD students is one of the best parts of #academia for me. The section on 'challenging your mentee' in this @APA_Monitor article was especially interesting. Looking forward to the rest of this series!

Re: "APA Issues First-Ever Guidelines for Practice With Men and Boys" (January)
@TheMindfulMatch Grateful for the APAs work on recognizing the harmful impact of traditional masculine ideology on men—excited for increased attention directed at men's mental health and treatment!

Re: "Despair in Venezuela" (January)
@SandraMattar23 Despair in Venezuela—Thanks @APA_Monitor for highlighting the humanitarian crisis in Venezuela!

Re: "Working to Protect Children Worldwide" (November)
@katrina_MSc How cool! These are exactly the type of programs that help facilitate breaking the cycle when it comes to trauma.

Re: "A Growing Demand for Sport Psychologists" (November)
@APADiv19 Great article @APA_Monitor and thanks for the mention about military psychologists doing similar work. ■

TEACHING OUR CHILDREN WELL

APA continues to expand its efforts to support the health and well-being of children and adolescents

BY ARTHUR C. EVANS, JR., PhD

Working to improve the lives of children has always been a priority for APA through such efforts as the ACT: Raising Safe Kids Program, our advocacy against separating children and parents at the southern border and the many initiatives launched by our Children, Youth and Families Office. One of the most far-reaching ways we are supporting children and youth is through Magination Press, the children's book imprint of APA Publishing that brings critical concepts of mental health and well-being to a young audience. This effort is a strong example of how applying psychological science can have a tremendous impact on the lives of children and their families.

We know that exposing children to information about mental health is critical for their healthy development. Through Magination Press, APA makes mental health and well-being come alive for them through beautifully illustrated, entertaining stories that are grounded in research and written by psychologists and other mental health professionals. To date, there are 180 Magination titles, covering a vast array of topics, including bullying, depression, fear, trauma, grief and much more.

APA CEO
Dr. Arthur C. Evans Jr.

SIMONE FORGIONE

Not only have children and adolescents alike embraced these books, parents, psychologists and others see them as valuable teaching tools. That's because, to make these books as useful as they can be, most include notes to teachers, parents and others offering research-based, practical advice on the topics covered.

To further support parents and others, last year APA launched Maginiationpressfamily.com, which offers tools and strategies for helping to manage children's stress and anxiety, as well as tips on mindfulness. This year, we are building on our success, expecting to publish 25 new titles with books on such timely topics as gender nonconforming youth, phobia, dementia and more. New titles coming in 2019 include "Giraffe Asks for Help," which teaches that it's OK to lean on others, and "You Are Your Strong," which helps kids understand big emotions.

One of our strategic goals is to bring psychological science to the public to address the critical issues they face. Magination Press is a great example of how, by translating psychological research, our field can have impact. Please visit the Magination Press website to see for yourself how the collection is raising the visibility of psychology to the public. And the public is noticing: Many of our titles have received noteworthy praise, including a Teachers' Choice Award, a Mom's Choice Award and more.

It's the combined power of psychology and literature that makes Magination Press books special. Happy reading. ■

The Hot List

TOOLS TO STREAMLINE REIMBURSEMENT

APA's new companion organization, **APA Services, Inc.,** offers a range of tools to help members advocate for psychology and promote its contributions to the nation's health and welfare. One of those tools is an updated section for practicing psychologists on reimbursement, which offers pointers for billing and working with commercial insurers and government payers. Find these resources and more at **www.apaservices.org/practice/reimbursement.**

NEW VIDEO SERIES ON RACE

The first installment of APA's new **"Facing the Divide"** video series on race, racism and health focuses on the complex psychological issues associated with race-related stress and offers ways to lead productive discussions about race and prejudice in the classroom and beyond. View at **https://on.apa.org/FacingtheDivide.**

IMPROVE CARE FOR PATIENTS WITH DIABETES

Learn how to treat the mental health issues associated with diabetes at the **Mental Health Provider Diabetes Education Program,** a 12-credit continuing-education course held June 8 in San Francisco, sponsored by APA and the American Diabetes Association. Register at **https://on.apa.org/DiabetesCE.**

CULTIVATE YOUR RESEARCH SKILLS

Immerse yourself in state-of-the-art research methods this summer by attending one of APA's four **Advanced Training Institutes** held at universities throughout the United States. Apply now at **https://on.apa.org/ati-2019.**

GIVE A BOOK TO A COMMUNITY IN NEED

Make a difference in a child's life by **donating a children's book** to an underserved school or community via a new partnership between APA's Magination Press and the literacy nonprofit Reading Is Fundamental. Donate at **https://on.apa.org/Donate-A-Book.**

EXPLORE NEW DATA ON ADOLESCENT HEALTH

APA's new webinar on data from the latest **Youth Risk Behavior Survey** from the Centers for Disease Control and Prevention offers a close look at the findings on sexual behavior and substance use at **https://on.apa.org/CDC.**

CLOCKWISE FROM TOP LEFT: TRILOKS, GREMLIN, FG TRADE, DASH_MED/GETTY IMAGES

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AMERICAN PSYCHOLOGICAL ASSOCIATION

COMPILED BY LEA WINERMAN

In Brief

THE LATEST PEER-REVIEWED STUDIES WITHIN PSYCHOLOGY AND RELATED FIELDS

Primary Colors

Many toddlers can understand color terms as early as 19 months, finds a study in *Developmental Psychology*. Researchers showed 146 children, ages 1 to 4 years, a screen with pairs of objects in two different colors—for example, a red car and a blue car. Then, the researchers said either "Look, red" or "Look, a red car" and used eye-tracking technology to record which of the two objects the children looked at. At 12 months and 16 months, children looked at both objects at chance levels, but beginning at 19 months they looked at the target-color object at greater-than-chance levels, on average. The researchers also found that the children's accuracy improved when the color word was used as an adjective (e.g., "Look, a red car") rather than by itself ("Look, red"). DOI: 10.1037/dev0000609

FAM VELD/GETTY IMAGES

LUCKY DAY

When the sun is shining or your hometown sports team has just won a game, you're slightly more likely to take risks such as buying a lottery ticket, finds a study in *PLOS ONE* that examined how population-level variables that affect a city's mood could change its residents' risk-taking behaviors. Researchers examined more than 5 million Twitter posts (tweets) from residents of Boston, Chicago, Dallas, Los Angeles, New York and San Francisco from 2012 to 2013. They cross-referenced those data with information about daily weather, sports team win-loss records and state lottery-ticket sales during the same time period. The researchers found that when the sun came out after days of rain and when local sports teams had recently won, a city's mood was happier (as reflected in tweets) and people spent more money on lottery tickets—up to 2.5 percent more in some neighborhoods.

DOI: 10.1371/journal.pone.0206923

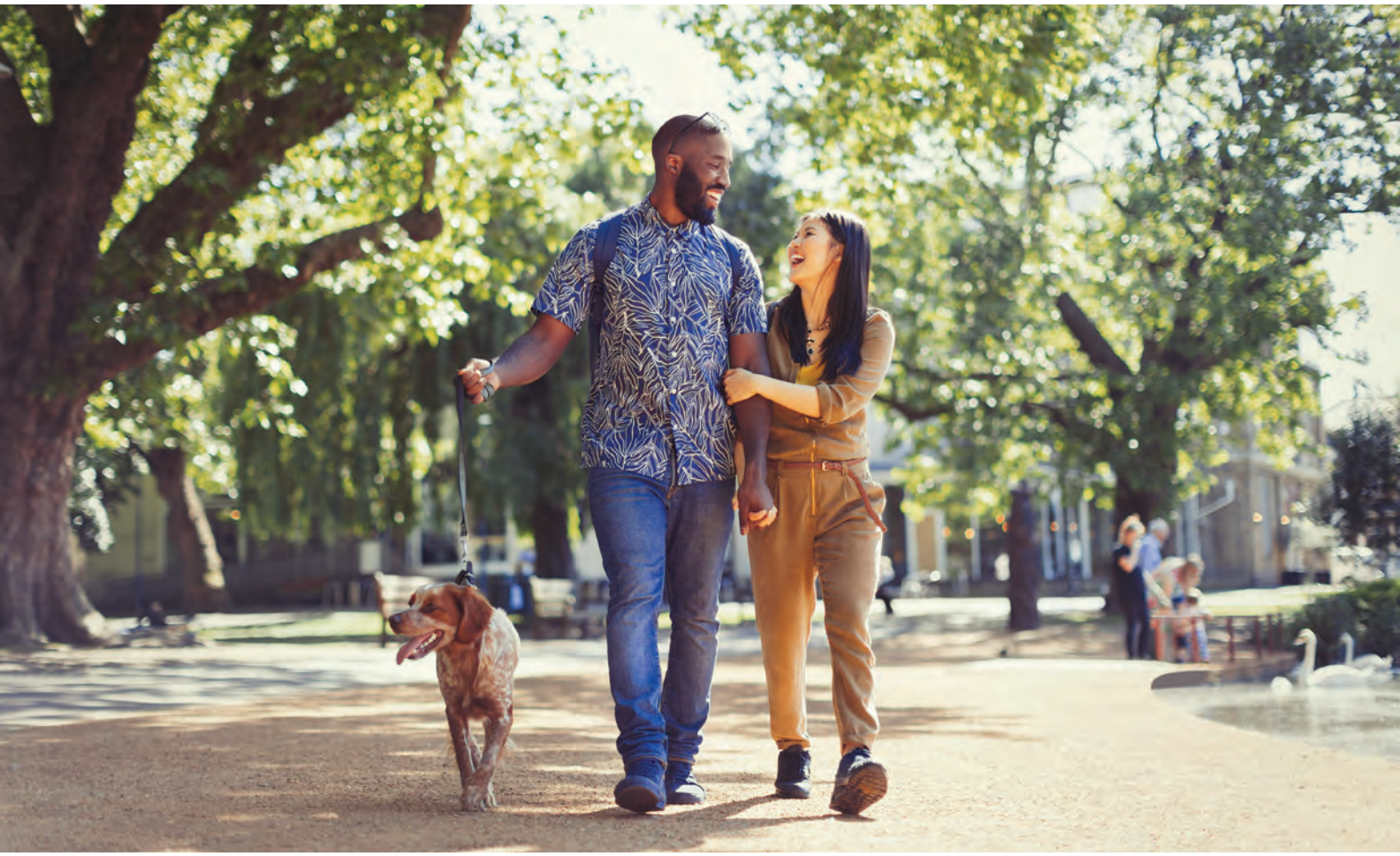
SEASONS OF ILLNESS

Hospital admittance rates for mental illness vary seasonally, suggests a study in *Canadian Psychology/Psychologie canadienne*. Using administrative records from the Canadian province of New Brunswick, researchers analyzed 57,730 mental health-related hospital admissions from 41,690 patients between 2004 and 2014. They found that admission rates regularly varied over the course of the year, peaking at the same times each year. The highest rates of admission for children and teenagers were in February; adult admissions peaked in May.

DOI: 10.1037/cap0000156

TAKE A (FAR) SEAT

Stigma against mental illness is expressed through people's concrete behaviors as well as their



People take more risks on bright, sunny days, suggests a study that looked at lottery-ticket-sale data.

DJANGO/GETTY IMAGES

attitudes, finds a study in *Stigma and Health*. Researchers told 114 U.S. undergraduates that they would be meeting a man with an illness—some were told the man had Type 2 diabetes, while others were told he had schizophrenia. Participants then moved to a room where the man was sitting and were told to sit in any one of several available seats. On average, participants who were told the man had schizophrenia chose to sit farther from him than did participants who were told he had diabetes. The researchers also found that participants who expected to meet someone with schizophrenia had greater self-reported fear and higher appraisals of the man's dangerousness and unpredictability.

DOI: 10.1037/sah0000156

INTERNATIONAL ADOPTEES

Asian children adopted from overseas by non-Asian parents experience more racial discrimination than their parents realize, suggests a study in the *Asian American Journal of Psychology*. Researchers interviewed 95 teenage adoptees who lived in the Midwest, along with a parent of each teen. Overall, the researchers found that parents underestimated the degree to which the adoptees had experienced racism from schoolmates, acquaintances and family. Parents also overestimated their teenagers' openness to discussing these racist experiences and the teenagers' positive attitudes toward activities related to ethnic heritage.

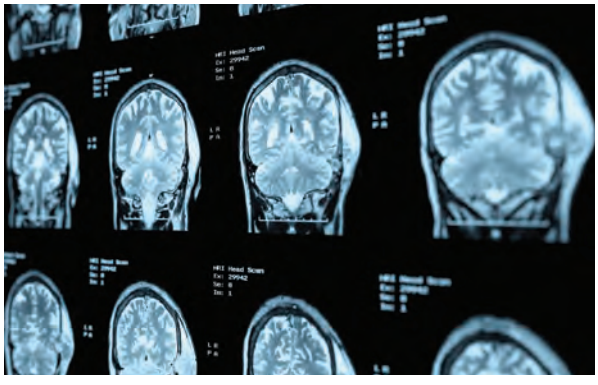
DOI: 10.1037/aap0000128

International adoptees from Asian countries face more racial prejudice than their parents realize.

BIGGER BRAINS ARE SMARTER

People with physically larger brains are slightly smarter than those with smaller brains, on average, finds a preregistered study in *Psychological Science*. Researchers analyzed data on brain size (from MRI scans) and cognitive test performance for 13,608 participants in the United Kingdom. Brain size accounted for about 2 percent of the variance in cognitive performance among the participants, the researchers found. Some previous research had suggested a connection between brain size and intelligence, but the new study more systematically controlled for potentially confounding factors, including sex, age, height and socioeconomic status.

Brain size accounted for about 2 percent of variance in cognitive performance in one study.



DOI: 10.1177/0956797618808470

POWER DYNAMICS

Sexist men underestimate their power in romantic relationships, finds a study in the *Journal of Personality and Social Psychology*. In four experiments with 1,096 heterosexual men and women (mainly in New Zealand and the United States), participants completed surveys that assessed their sexist attitudes, perceptions of autonomy, aggression, the influence of their partners' behavior or opinions, and their relationship satisfaction and security.

TOP: LEWIS TSE PUI LUNG/GETTY IMAGES; BOTTOM: CG INSPIRATION/GETTY IMAGES

One experiment included video-recorded conversations with couples about their most serious conflicts. Across all four experiments, men who expressed more hostile and sexist attitudes thought that they had less power in their relationships compared with their partners' reports of that power. They were also more likely to be aggressive toward their partners, as measured by partner report and in the video-recorded conversations.

DOI: 10.1037/pspi0000167

FOOTBALL RISK

Teenagers who play just one season of high school football show changes in their brains afterward, finds a study in *Neurobiology of Disease*. Researchers fitted the helmets of 16 football players, ages 15 to 17, with accelerometers to measure head impacts over the season. At the beginning and end of the season, the researchers used a type of MRI called diffusion kurtosis imaging to examine the structure of the gray matter in the players' brains. They found that the microscopic organization of the gray matter in players' brains changed by the end of the season, and the changes correlated with the number of impacts and their locations on the players' heads as measured by the accelerometers. None of the players experienced a concussion, and they did not show any differences on tests of cognitive function before and after the season, but the researchers say more research is needed to understand how these structural changes will affect the players as they get older.

After playing one season of high school football, teenagers' brains showed changes in gray matter structure.

DOI: 10.1016/j.nbd.2018.07.020

Fruit flies can learn preferences and behavior from watching other fruit flies—a rudimentary form of insect "culture."

INSECT CULTURE

Even the lowly fruit fly has a "culture": The insects can learn preferences and behaviors from other fruit flies around them and pass those preferences and behaviors on to others, finds a study in *Science*. In one experiment, the researchers placed observer female fruit flies where they could watch demonstrator flies pick between two males that had been colored either pink or green. Later, the observers chose the same color of mate that the

TOP: MIFLIPPO/GETTY IMAGES; BOTTOM: ET_ENGINEER/GETTY IMAGES

demonstrators had preferred more than 70 percent of the time. In another experiment with groups of flies, the researchers found that these preferences could trickle down to the eighth generation of flies descended from the original observer group.

DOI: 10.1126/science.aat1590

APPENDIX LINKED TO PARKINSON'S DISEASE

People who have had their appendixes removed are nearly 20 percent less likely to develop Parkinson's disease, finds a study in *Science Translational Medicine*. Previous research has linked Parkinson's disease to the gut: The proteins that accumulate in the brain and are associated with symptoms such as tremors and stiffness are also found in the gut and may travel from gut to brain via the vagus nerve. To find out whether the appendix, which extends from the large intestine, might play a role, researchers analyzed the health records of nearly 1.7 million people from a Swedish national health registry. They found that people who had appendectomies at some point in their lives had a 19.3 percent lower chance of developing Parkinson's disease than those who still had their appendixes. Researchers also analyzed appendix tissue from volunteers without Parkinson's disease and found protein clumps similar to those found in the brains of Parkinson's patients.

DOI: 10.1126/scitranslmed.aar5280

GENETIC KNOWLEDGE

Learning about your genetic propensity toward obesity can change how your body reacts to food and exercise, suggests a study in *Nature Human Behaviour*. Researchers tested the DNA of 223 people for a gene variant associated with obesity and for another associated with exercise capacity. Afterward, about half the participants ate a meal while researchers measured the level of a fullness-signaling hormone in their bloodstreams; the other half engaged in an exercise test on a treadmill. A week later, the researchers gave the participants either true or false results from the genetic tests. Then, the participants ate the same meal or performed the same exercise task that they had the week before. The genetic information participants received affected how their bodies responded to the tasks: Those who were told they had a gene variant that made them less prone to obesity produced more of the fullness hormone than they had the week before, whether or not they actually possessed that variant. And those who were told they had the lower-exercise-capacity gene variant performed worse on the treadmill task, regardless of whether they actually had that variant.

DOI: 10.1038/s41562-018-0483-4

CHANGING GENDER ROLES

When young women are primed with the idea that more men are becoming stay-at-home dads, they are more likely to imagine themselves becoming primary breadwinners for their families, finds a study in *Personality and Social Psychology Bulletin*. Researchers asked 645 single female college students in the United States and Canada to answer questions about their lives 15 years in the future. Before answering, the students saw one of two charts depicting the percentage of stay-at-home parents in the United States who were dads. All students saw accurate numbers (the percentage increased from 4 percent to 12 percent over 25 years), but in one chart the graph was tweaked to make the increase appear steeper and the title was changed to "Rapidly increasing

Young women are more likely to imagine themselves becoming primary breadwinners when they believe that more men are becoming stay-at-home dads.

RUNZELKORN/GETTY IMAGES

prevalence of stay-at-home dads" from "Low prevalence of stay-at-home dads." On average, participants who saw the chart suggesting a sharper increase in the number of stay-at-home dads were more likely to see themselves becoming primary breadwinners someday.
DOI: 10.1177/0146167218797294

LEARN TO CODE, LEARN TO THINK?

Many parents and educators believe that teaching children how to program computers can improve their cognitive skills and school performance. Now, a meta-analysis in the *Journal of Educational Psychology* supports that claim for some skills but not others. The researchers analyzed 105 studies with 539 total effect sizes. Overall, they found that children who learn to code have improved performance on tasks that require creative thinking, mathematical skills and metacognition and, to a lesser degree, on tasks that require spatial skills and reasoning. But learning computer programming skills affects literacy and overall school achievement the least.
DOI: 10.1037/edu0000314

REWARDING MEMORIES

The human brain is more likely to store memories that are associated with high-reward events, finds a study in *Nature Communications*. In six experiments with 174 total participants, researchers asked participants to explore a computer maze with hidden gold coins, each worth $1. While navigating the maze, participants also encountered pictures of everyday objects, such as tomatoes and paintbrushes. Immediately after the task and 24 hours later, the researchers gave participants a surprise memory test about those objects. When the test was given 24 hours later, participants were more likely to remember the objects that were closer, in number of steps in the maze, to the gold coins. However, no differences in memory were observed when the test was given immediately after the task. The researchers suggest that this is because when the brain consolidates memories overnight, it

Learning computer programming improves students' skills in some areas but not overall school performance, finds a meta-analysis.

VGAJIC. GETTY IMAGES

prioritizes memories associated with rewards.

DOI: 10.1038/s41467-018-07280-0

ONLINE THERAPY

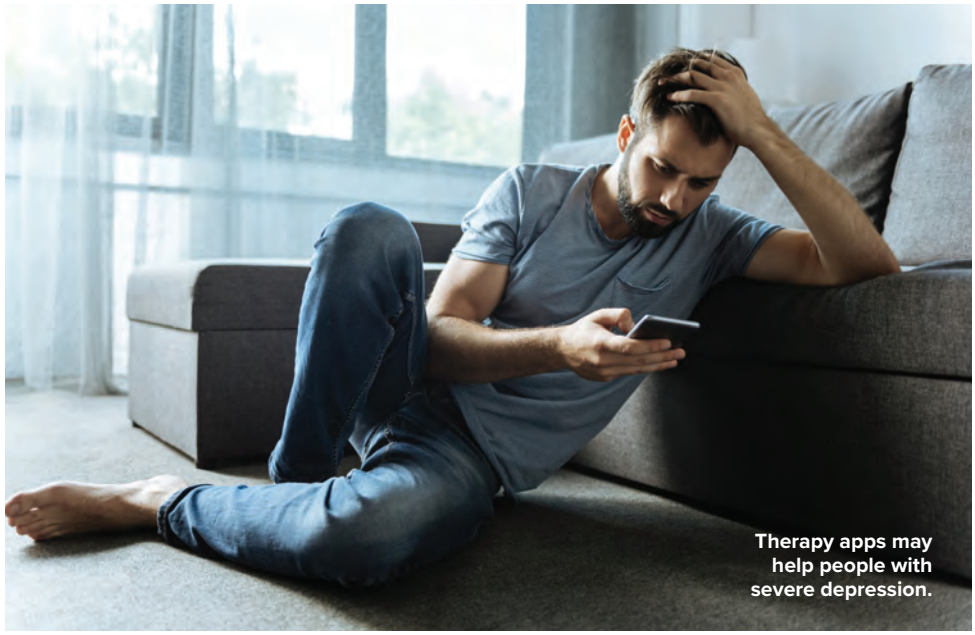
Self-guided internet cognitive-behavioral therapy (iCBT) can help people who have severe depression, according to a meta-analysis in the *Journal of Internet Medical Research*. Researchers reviewed 21 studies of iCBT for depression, with 4,781 total participants. In addition to examining the outcomes of the studies (whether the treatment worked), they looked at the studies' entry criteria (which patients were allowed to take part) because they suspected that iCBT studies might be more likely than studies of traditional face-to-face psychotherapy and medication treatments to exclude patients with severe depression. However, they found that iCBT studies were overall no more likely to exclude people with severe depression or other conditions such as substance use disorders or personality disorders.

DOI: 10.2196/10113

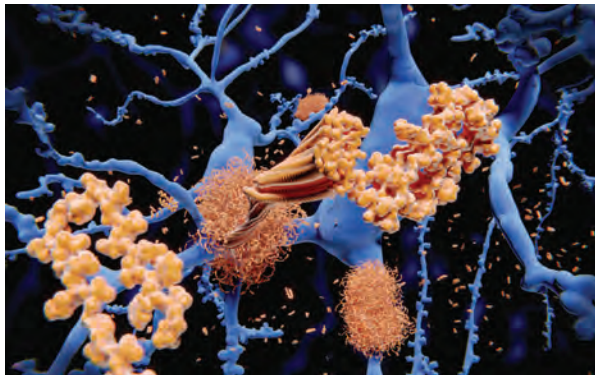
TRANSMISSIBLE ALZHEIMER'S?

The amyloid proteins that are associated with Alzheimer's disease may be transmitted from one person to another during some medical procedures, suggests a study in *Nature*. Researchers examined brain tissue from eight patients who had died in their 30s and 40s of Creutzfeldt-Jakob disease. All of the patients had been treated as children with a human growth hormone derived from the pituitary gland of another person. The researchers found that in addition to the protein that caused the Creutzfeldt-Jakob disease, all of the patients had an unusually large buildup of the Alzheimer's-related amyloid plaque in their brain tissue. The researchers then tested the decades-old preserved growth hormone the patients had been given and found that it contained the amyloid protein. They injected samples of the hormone into mice and observed that it caused amyloid plaque buildup in the mice's brains. The growth hormone used today is derived synthetically, but the researchers say that the study points to the need for more research on whether other surgeries and medical procedures could possibly transmit Alzheimer's-related proteins.

DOI: 10.1038/s41586-018-0790-y



Therapy apps may help people with severe depression.



Proteins associated with Alzheimer's disease could be transmitted from one person to another during some medical procedures, suggests a study.

ANTIPSYCHOTICS IN CHILDREN

Children and youth who do not have psychotic symptoms but are prescribed high doses of antipsychotic medication for attention-deficit/hyperactivity disorder, depression and other conditions are at increased risk of death in ensuing years, according to a study published in *JAMA Psychiatry*. Researchers examined the medical records of nearly 250,000 children, adolescents and young adults, ages 5 to 24, enrolled in Medicaid in

TOP: YACOBCHUK/GETTY IMAGES; BOTTOM: SELVANEGRA/GETTY IMAGES

Tennessee between 1999 and 2014. They compared those who were prescribed antipsychotic medications at higher doses with those prescribed them at lower doses, as well as with a control group prescribed medications other than antipsychotics. On average, those prescribed high doses of antipsychotics had a 3.5 times greater risk of death over the course of the study compared with those prescribed other medications. According to the researchers, these results highlight the need for careful prescribing and monitoring of antipsychotic medications in young patients, and for further studies of the safety of these medications for children and youths.

DOI: 10.1001/jamapsychiatry.2018.3421

TIRED AND IRRITABLE

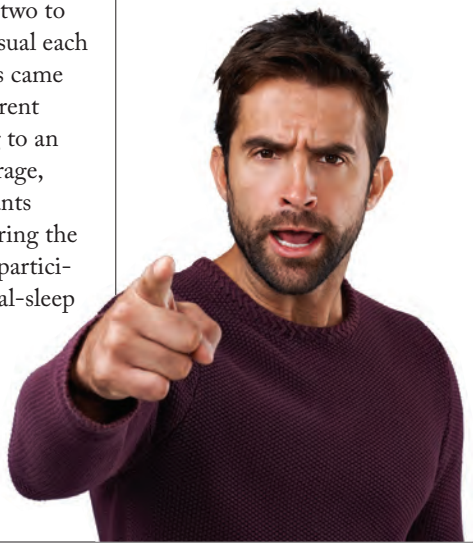
Losing just a couple of hours of sleep makes people more likely to react angrily to frustrating situations, finds a study in the *Journal of Experimental Psychology: General*. Researchers asked 142 people in the United States, ages 18 to 79, either to maintain their normal sleep routine for two days or to sleep two to four fewer hours than usual each night. Then, participants came into the lab to rate different products while listening to an annoying noise. On average, sleep-deprived participants reported more anger during the task than normal-sleep participants. Also, while normal-sleep participants reported becoming accustomed to the noise and less angry over time, sleep-deprived participants reported increasing levels of anger over time. The results indicate that sleep deprivation may cause angry responses rather than reduce them because of fatigue.

DOI: 10.1037/xge0000522

BREAK THE CYCLE

Having an abusive boss does not mean that one is destined to someday abuse one's own employees, finds a study in the *Journal of Applied Psychology*. Instead, some managers learn from bad experiences to become better bosses themselves. In two online experiments with more than 700 participants, and in a field study with 500 employees and bosses in various industries in India, the researchers explored how people reacted to bad bosses in both hypothetical and real-life situations. They found that people who had abusive managers but purposefully disidentified from them and distanced themselves from the abusive behavior, demonstrated more ethical behavior as leaders themselves and treated their own employees more respectfully. ■

DOI: 10.1037/apl0000360



Losing just two hours of sleep per night can make people more irritable and easily frustrated.

Some employees with abusive bosses can learn "what not to do" and become better bosses themselves.

● **For direct links** to the research cited in this section, visit our digital edition at www.apa.org/monitor/digital.

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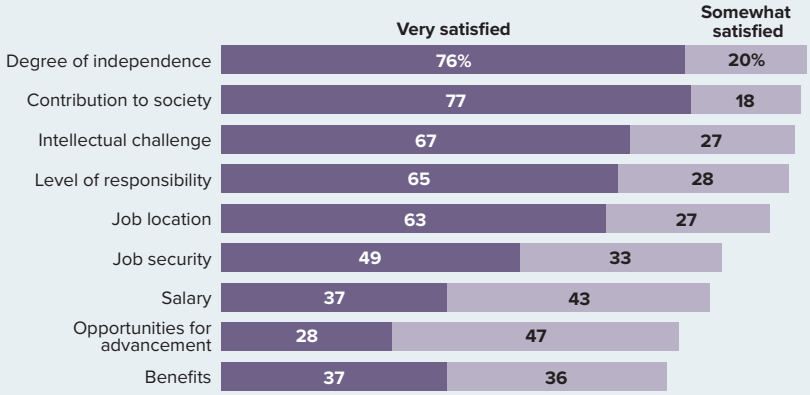
Datapoint

NEWS ON PSYCHOLOGISTS' EDUCATION AND EMPLOYMENT FROM APA'S CENTER FOR WORKFORCE STUDIES

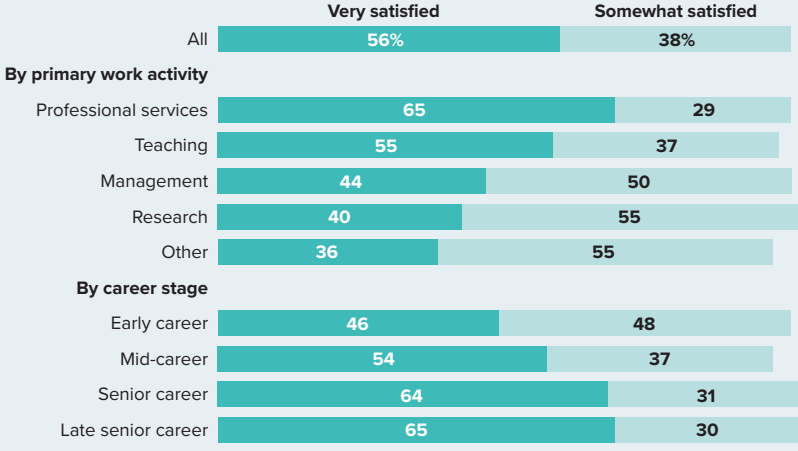
MOST PSYCHOLOGISTS ARE SATISFIED WITH THEIR JOBS

- In 2017, 93 percent of the approximately 187,000 psychologists in the U.S. workforce reported they were "somewhat satisfied" or "very satisfied" with their jobs.[1] That percentage is comparable to the satisfaction reported in science and engineering fields overall (92 percent).
- Psychology doctorate and professional degree holders were most likely to report they were "somewhat" or "very satisfied" with their jobs' degree of independence (96 percent) and contribution to society (95 percent).
- Psychology doctorate and professional degree holders whose primary work activity involved professional services and teaching were most likely to report being "very satisfied" with their jobs (65 percent and 55 percent, respectively).[2]
- The percentage of psychology doctorate and professional degree holders who were "very satisfied" with their jobs was highest at later career stages.[3]

U.S. Psychologists' Job Satisfaction by Job Aspect



Job Satisfaction by Primary Work Activity and Career Stage



Note: Figures are for 2017. Totals in graphs may not match totals reported in text due to rounding.

By Luona Lin, MPP, Peggy Christidis, PhD, and Jessica Conroy, BA. For more information, contact APA's Center for Workforce Studies at cws@apa.org.

[1]National Science Foundation (NSF), National Center for Science and Engineering Statistics. (2017). National Survey of College Graduates Public Use Microdata File and Codebook. Retrieved from https://ncsesdata.nsf.gov/datadownload. The use of NSF data does not imply NSF endorsement of the research, research methods or conclusions contained in this report. Respondents were asked to rate their satisfaction (very satisfied, somewhat satisfied, somewhat dissatisfied or very dissatisfied) with the principal job they held (job on which they spent the most hours during a typical work week). Psychologists included those in the workforce whose highest degree is a doctorate or professional degree in psychology.
[2]Primary work activity refers to the activity in which the individual worked the most hours at the principal job. Professional services includes health-care activities, but may also include other professional services, such as financial services. Other work activity includes computer applications, production and work activities not otherwise specified.
[3]Career stages were coded into four categories based on years since receiving highest degree: early career (1 to 10 years), mid-career (11 to 20 years), senior career (21 to 30 years) and late senior career (31 or more years).

BILL WEBSTER

OVERTURNING LONG-HELD BIASES

With new practice guidelines and research efforts, South African psychologists are leading the way for more equitable treatment of LGBTI individuals

BY ZARA GREENBAUM

George* grew up in rural South Africa, the nephew of a famous evangelical pastor. Five years ago, at age 16, he came out to his family. They responded with a ceremony to "drive the devils out of him," intended to turn him straight.

This type of reaction is still common in religious circles. Though South Africa's post-apartheid constitution, adopted in 1996, is one of the world's most progressive and the first to protect lesbian, gay, bisexual, transgender and intersex (LGBTI) rights, the lived experiences of people like George point to a major gap between policy and reality.

"On paper, South Africa is a wonderful place to be sexually and gender diverse," says Juan Nel, professor of clinical psychology at the University of South Africa in Pretoria, who has a doctoral degree in psychology. "But that legal framework does not translate to the daily reality for many individuals, who continue to experience exclusion, discrimination, ostracization and, in some instances, homo- and transphobic victimization."

*Name changed to protect privacy

Problems range from inadequate medical and psychological services for transgender South Africans who seek gender reassignment surgery to violent acts such as corrective rape. Studies indicate that LGBTI individuals are some of the most discriminated against in the country. For example, a 2016 survey of South African adults found that 72 percent feel same-sex activity is "morally wrong" (Progressive Prudes Survey, 2016), while Nel's research on hate and bias identified sexual orientation and gender identity as two of the most common targets of those committing hate crimes (Hate and Bias Crimes Monitoring Form Project, 2017).

To begin to close the gap between laws and attitudes, in 2007 Nel partnered with APA and the International Psychology Network for LGBTI Issues (IPsyNet) to advocate for the sexually and gender diverse in South Africa. And in 2013, he helped launch the Psychological Society of South Africa's (PsySSA) Sexuality and Gender Division, of which he is vice chair.

Now, the division, which has grown to 50 members, has released affirmative practice guidelines for psychologists who work with sexually and gender diverse individuals—the first practice guidelines of any kind released by an African psychological society. In addition, the division has published position statements on numerous national and international concerns, advanced scientific research on LGBTI issues and assisted South African universities with curriculum development. The group hopes this work will serve as a model for other African nations, many of which still treat homosexuality as a crime.

"Because of South Africa's very progressive legal framework, it's been relatively easy to do

Members of the South African lesbian, gay, bisexual, transgender and intersex community chant slogans as they take part in the annual Gay Pride Parade on June 24, 2017, in Durban.

RAJESH JANTILAL/AFP/GETTY IMAGES

LGBTI work here," says Suntosh Pillay, a clinical psychologist and member of PsySSA's Sexuality and Gender Division, who has a master of social science (MSocSc) in clinical psychology. "What's been more challenging is changing attitudes, because as much as the laws can change, influencing social and cultural attitudes can be quite difficult."

PROGRESSIVE MOVEMENT

Among psychologists, one of the motivations for advocating for the LGBTI community is to right past wrongs: During the apartheid period, psychologists provided the South African government superficial scientific justification for persecution based on sexual orientation, including forced conversion therapy and gender reassignment surgery.

"If psychology was part of the problem, then it also needs to be part of the solution," says Niel Victor, MSocSc, clinical psychologist and treasurer of the Sexuality and Gender Division.

This lens of professional atonement, as well as a broader effort among psychologists to dissolve the heteronormative structures and ideals of South African society, led to the launch of the division and explains why social justice efforts are just as central to its mission as traditional research and practice. Psychologists officially began that work in 2007 with formal responses to national, continental and international issues arising in the areas of sexual and gender diversity. Under Nel's leadership, PsySSA released a science-informed statement evaluating—and condemning—Uganda's proposed Anti-Homosexuality Bill in 2009. The statement cited international and South African research to explain the nature of sexual orientation and the detrimental effects of discrimination on the basis of it.

"The Sexuality and Gender Division has become a springboard for our work," says Chris McLachlan, MSocSc, a clinical psychologist who specializes in transgender issues and is a reverend at the Reforming Church in Pretoria. "Because these statements are professionally advanced, it gives our words more gravitas because we have academia and private practice behind us."

More recent efforts to address LGBTI issues include the division's push last year for the South African government to expand medical care for transgender people.

The group also released a broader position statement in 2013 emphasizing that sexual and gender diversities are normal variations that do not cause pathology and encouraging practitioners to adopt "a stance of openness, acceptance and affirmation" toward LGBTI patients. The statement is grounded in a South African body of research, including Nel's study of hate crimes and an assessment Victor conducted of LGBTI individuals' experiences in psychotherapy.

"We must constantly remind ourselves, and remind our colleagues, that social justice is relevant to how we practice every single day," says Pillay. "It's relevant to the decisions we make when we see clients, what we put into the curriculum, the kind of research that we do, the kind of language that we use."

PRACTICE GUIDANCE

In 2017, the research and advocacy led by the Sexuality and Gender Division culminated in its biggest accomplishment so far: the creation of 12 affirmative practice guidelines for psychologists who work with LGBTI populations. The division sees these guidelines as essential for helping to dismantle the heteronormative ideals that pervade South African society.

"Very few psychology professionals are competent in dealing with the sexually and gender diverse, and some of them continue to hold their own prejudices," Nel says. "As a result, interactions with psychology professionals are not as affirming as we believe is required, especially given that those interactions are often the last safe space for marginalized people to seek out support."

For example, a therapist may ask a male client if he has a wife or girlfriend without considering that he might be gay. In more extreme instances, health-care professionals have broken confidentiality and exposed patients' sexual or gender identities to mutual acquaintances.

Often, psychologists are well-intentioned but unequipped to handle LGBTI issues in the South African context. For instance, LGBTI guidelines from other countries typically advise that therapists encourage patients to come out publicly, but Pillay says this can be dangerous in a hostile society.

"We therefore advise practitioners to navigate this issue very carefully, balancing it with the pros and cons and the real risk that people face if they're to come out in our society," he says.

The 12 guidelines cover nondiscrimination, the necessity for an affirmative stance, LGBTI developmental pathways, handling intersecting discriminations and continued professional development. Each guideline contains a rationale and supporting research as well as instructions for applying the guideline in personal, institutional and societal contexts.

For the guideline that covers intersecting discriminations, for instance, the document cites research on the "matrix of identities" that contribute to a person's self-concept. It encourages practitioners to consider issues around poverty, unemployment, race, culture, language, refugee status, HIV/AIDS and urban versus rural residency.

Though the guidelines are informed by work done by APA and the British Psychological Society, they differ in several key respects from guidelines issued by those organizations. Rather than focusing on sexual orientation, for example, they address a broad spectrum of sexual and gender identities. The guidelines also are directed toward all psychologists, including researchers, rather than practitioners only. Most important, the guidelines are grounded in African and South African bodies of knowledge, drawing almost exclusively from research conducted on the continent.

So far, the document has been incorporated into clinical psychology programs at multiple South African universities and used to conduct professional development workshops. The guidelines have also attracted interest from

FURTHER READING

PsySSA Sexual and Gender Diversity Position Statement
2013

PsySSA Practice Guidelines for Psychology Professionals Working With Sexually and Gender-Diverse People
2017

International Psychology Network for LGBTI Issues (IPsyNet) Statement and Commitment
2018

Diversity in Human Sexuality: Implications for Policy in Africa
Academy of Science of South Africa (ASSAf), 2015

Psychology and Hate Speech: A Critical and Restorative Encounter
Judge, M., & Nel, J.A.
South African Journal of Psychology, 2018

outside the psychology discipline, including from social workers, public health professionals, physicians, nurses and surgeons. Several government offices, including South Africa's Department of Social Development, for example, have requested formal training based on the guidelines.

"Already, the affirmative practice guidelines have helped us create a platform from which to develop more inclusive curricula and spearhead continued professional development in psychology and beyond," Victor says.

AN EXPANDING REACH

Outside PsySSA, the resources and conversations generated by the Sexuality and Gender Division are also making a difference.

"Where I've really seen the impact is when sexually and gender diverse people are faced with a situation where there are no safe spaces left," says Victor. "I've increasingly seen safe spaces being created—in the clinic, in therapeutic rooms and at universities—based on our practice guidelines and ongoing work in this area."

The division also continues to stimulate research in new areas specific to South African society, such as Pillay's pioneering survey of gay South Africans of Indian descent. Members of the division currently have several academic studies in progress, including new studies of hate and bias in South Africa and the ethics of working with marginalized populations.

Another major focus area moving forward involves applying the insights within the affirmative practice guidelines to new domains, disciplines and populations. Psychologists who are studying trauma, sexual assault and education, as well as leaders in the fields of public health and social work, hope to develop their own practice guidelines with assistance from Nel and his colleagues.

Meanwhile, the Sexuality and Gender Division is working directly with activists in other African countries, including Tanzania and Cameroon, who hope to establish a tradition of affirmative practice for the sexually and gender diverse. This work requires patience—in some countries, homosexuality is still punishable by death—and creativity. Victor says a human-rights framework doesn't resonate with most Africans—social justice campaigns for LGBTI rights feel colonialist because of their Western origins. Instead, focusing on health, wellness and scientific research tends to be more effective.

"We don't want to be seen as a colonizer of other countries; we want to open up the doors for people to empower themselves," McLachlan says. "Our work throughout Africa is more about sharing what we have learned so that they can develop their own guidelines." ■

WORRYING TRENDS IN U.S. SUICIDE RATES

U.S. suicide rates have risen in recent years, while rates in other nations have fallen. What can we learn from their examples?

BY KIRSTEN WEIR

New data from the U.S. Centers for Disease Control and Prevention (CDC) show a worrying trend in suicides in the United States.

The suicide rate increased 33 percent from 1999 through 2017, from 10.5 to 14 suicides per 100,000 people (NCHS Data Brief No. 330, November 2018). Rates have increased more sharply since 2006. Suicide ranks as the fourth leading cause of death for people ages 35 to 54, and the second for 10- to 34-year-olds. It remains the 10th leading cause of death overall.

But it's a different story in other parts of the world. Over roughly the same period, other countries have seen rates fall, including Japan, China, Russia and most of Western Europe. What is going wrong on our shores—and what lessons can we import from elsewhere?

SUICIDE TRENDS: LOOKING FOR CLUES

Pinpointing the reasons that suicide rates rise or fall is challenging in part because the causes of suicide are complex. Risk factors include health factors (such as depression, substance use problems, serious mental illness and serious physical health conditions including pain), environmental factors (such as access to lethal means and stressful life events including divorce, unemployment, relationship problems or financial crisis) and historical factors (including previous suicide attempts, a family history of suicide and a history of childhood abuse or trauma).

"At the individual level, there is never a single cause of suicide. There are always multiple risk factors," says Christine Moutier, MD, chief medical officer of the American Foundation for Suicide Prevention. "That confluence of multiple risk factors makes it a trickier business to explain a population-level rise."

And while the climbing rates are cause for concern, experts point out that they don't tell the whole story. In fact, the U.S. suicide rate is similar today to the rate of 30 years ago. Deaths by suicide fell markedly in the 1980s and 1990s before rising again at the turn of the century. What's more, while some countries, such as Russia, have seen dramatic declines in suicide rates since the 1990s, their rates are still well above those in the United States.

SUICIDE IN THE U.S.

33%
The increase in the rate of suicides from 1999 through 2017

2nd
Suicide ranks as the second leading cause of death for 10- to 34-year-olds and the fourth leading cause of death for people ages 35 to 54

10th
Suicide is the 10th leading cause of death overall

In other words, there is no obvious culprit for an increase in suicides—nor is there a single, easy solution we can import from other nations to turn the trend around. Yet there are clues.

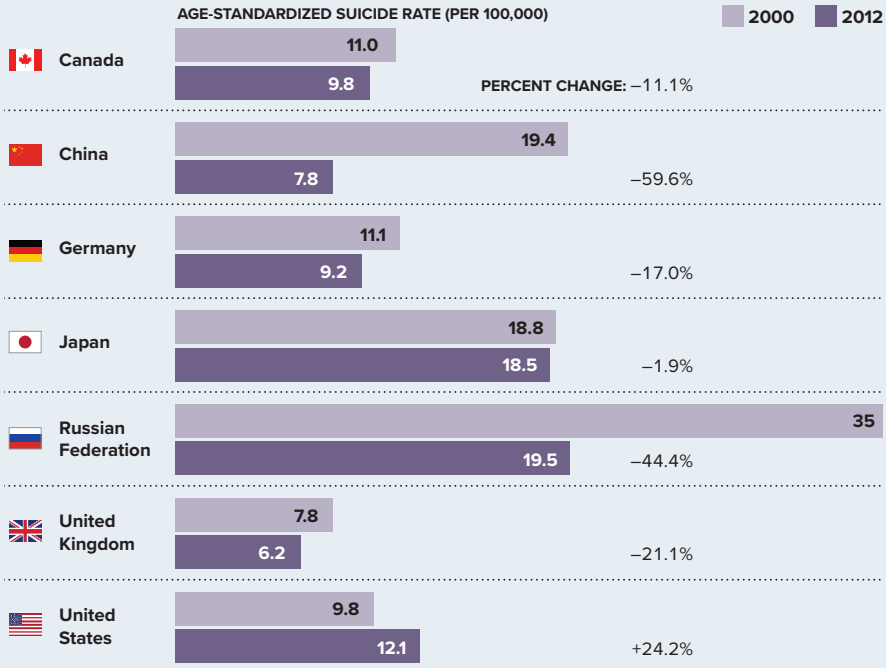
Socioeconomic changes might be part of the puzzle. Globally, suicide rates have often fallen when living conditions have improved. And the reverse is also true. Princeton University economists Anne Case, PhD, and Angus Deaton, PhD, have shown that deaths from suicide, drugs and alcohol have risen steeply among white, middle-aged Americans since 2000 (*PNAS*, Vol. 112, No. 49, 2015). They argue these "deaths of despair" are linked to a deterioration of economic and social well-being among the white working class (Mortality and Morbidity in the 21st Century, *Brookings Papers on Economic Activity*, Spring 2017).

The CDC figures appear in line with that theory. From 2000 to 2016, the suicide rate for white Americans climbed from 11.29 to 15.7. For black Americans, it rose from 5.52 to 6.03 over the same period. What's more, suicides have increased most sharply in rural communities, where loss of farming and manufacturing jobs has led to economic declines over the past quarter century.

Meanwhile, people who are struggling often fail to receive interventions that could save their lives. "There is a lack of accessible, affordable, effective mental health care. And the health-care system hasn't been designed with suicide risk in mind," Moutier says.

Suicide Trends Around the World

The most recent data available on rates of deaths by suicide reported by seven countries



Source: Preventing Suicide: A Global Imperative, World Health Organization, 2014

LIMITING LETHAL MEANS

While data from other countries can't explain the rising rate of American suicides, they may hold clues about how to prevent them. One takeaway from the data both at home and abroad: Limiting access to means of death can make a real difference.

When countries have made it harder to access a means of death, their suicide rates have declined. In England, people once could end their lives with carbon monoxide from toxic coal gas. When the country switched to less-toxic gas for heating and cooking, deaths from suicide dropped by 40 percent. In Asia, many countries saw suicide rates drop after making it more difficult to access toxic pesticides that are used in farming. Bridge barriers that prevent people from jumping have similar effects.

In the United States, more than half of all suicide deaths are the result of firearms. And there's evidence that when access to guns goes down, so do suicide deaths. During the 1990s, household gun ownership fell significantly. During those years, deaths from suicide by firearm also decreased, while suicide by other means stayed about the same. The result: a notable drop in the overall suicide rate, from more than 12 per 100,000 in 1990 to just under 10.5 in 1999.

BILL WEBSTER

A STRATEGY FOR PREVENTION

Another common element among many countries that have seen suicide rates fall: They have made suicide prevention a mission, through efforts such as improving access to mental health treatment, investing in community interventions, coordinating suicide prevention across health-care, social, education and employment services, and implementing workplace suicide prevention programs that train supervisors to identify and help those at risk. "Some of those countries, including Japan, have gotten impressively serious about investing in a national plan," Moutier says.

Japan has long had some of the highest suicide rates among industrialized countries. Rates there rose markedly in the late 1990s, a trend often attributed to the Asian financial crisis of 1997. Around the turn of the 21st century, a cultural shift occurred. Japanese citizens began to view suicide as a public health problem rather than as a personal problem to deal with in private. In 2006, the country passed legislation to fund suicide awareness and prevention campaigns and by 2012, the number of suicide deaths had fallen below 30,000 for the first time in more than a decade.

One element of Japan's plan that appears to have been helpful was a mandate requiring that detailed, municipal-level suicide statistics be released every month. That step allowed suicide prevention resources to be matched to communities with the greatest needs.

In the United States, timely suicide data that include details about risk factors and mechanisms of death have been hard to come by. The CDC's National Violent Death Reporting System, which collects such details, was only created in 2002, and it wasn't until 2018 that it was expanded to collect data on suicides and other violent deaths from all 50 states. "We haven't had a really good picture of the characteristics and life experience of suicide decedents across the U.S.," says Jane L. Pearson, PhD, chair of the Suicide Research Consortium at the National Institute of Mental Health.

The United States has also been slow to develop a national strategy. The country's first national plan to address suicide prevention was published in 2001, and it wasn't until 2010 that the National Action Alliance for Suicide Prevention was launched as a public-private partnership to advance and update the National Strategy for Suicide Prevention. That strategy, released by the U.S. Surgeon General and the Action Alliance in 2012, outlines goals and objectives for reducing deaths by suicide.

It's an encouraging step, Pearson says, but there's been a lag in moving from research to action to meet the National Strategy objectives. Accessible, affordable mental health services are still out of reach for many people with suicidal thoughts and behaviors. "We can't point to any single factor causing an individual to consider suicide, but we can point to health-care practices that can make a difference in suicide prevention. The three key areas are risk identification, intervention and follow-up," Pearson says. "We're making progress in understanding risk factors and how to intervene, but the rate keeps climbing because we're not fully implementing what we know."

One promising approach comes from a study by psychologist Edwin Boudreaux, PhD, at the University of Massachusetts Medical School, and colleagues. The multi-site trial explored universal suicide screening in hospital emergency departments. Study participants who were identified as being at risk received an intervention that involved an assessment, brief intervention, discharge resources and follow-up phone calls focused on reducing suicide risk. Patients who received the screening and intervention had 30 percent fewer total suicide attempts in the next year compared with patients who received treatment as usual (*JAMA Psychiatry*, Vol. 74, No. 6, 2017).

Such interventions are promising, but there's a lot of work to be done. Meanwhile, Pearson and other experts argue that psychologists should be doing more to help those at risk of dying by suicide. Many psychology training programs barely touch on the topic, Pearson says. "You'd think mental health professionals should be experts in helping suicidal people, but we aren't."

But it's never too late to get up to speed. "There's so much anxiety around treating suicidal people, but you shouldn't beat yourself up. If you trained more than five or 10 years ago, there wasn't a lot of science to inform what we should be doing clinically," Moutier says. "Now there are new standards to be aware of." She recommends mental health professionals, physicians and other clinicians familiarize themselves with the standard care recommendations published by the National Action Alliance for Suicide Prevention (*Recommended Standard Care for People with Suicide Risk: Making Health Care Suicide Safe*, 2018).

For professionals working in outpatient behavioral health settings, those recommendations include:

- **Assessing** patients for suicide risk at intake and repeating the assessment periodically.
- **Completing a safety plan** in collaboration with all patients at increased risk during the same visit.
- **Giving patients information** on telephone crisis lines.
- **Taking steps** to reduce access to lethal means, including asking family members to assist.
- **Reassessing risk** and reviewing or updating the safety plan at each visit until the risk is reduced.

A key message, experts say, is that there is genuine hope for people considering suicide. "Suicide is about despair, and the only cure for despair is hope," says Joel Dvoskin, PhD, ABPP, a clinical and forensic psychologist in Arizona and New Mexico who has worked with jails to implement suicide prevention interventions among inmates. "Psychologists can prevent suicide by helping people to regain hope. If we're not about that, we should get out of the business." ■

RESOURCES

Preventing Suicide: A Global Imperative
World Health Organization, 2014

Recommended Standard Care for People With Suicide Risk: Making Health Care Suicide Safe
National Action Alliance for Suicide Prevention, 2018

2012 National Strategy for Suicide Prevention: Goals and Objectives for Action
U.S. Surgeon General and the National Action Alliance for Suicide Prevention, 2012

Collaborative Assessment and Management of Suicidality
cams-care.com

Suicide Prevention Resource Center
www.sprc.org

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"I have been able to flourish in my doctoral training with the support from the American Psychological Foundation. More importantly, this funding has allowed me to conduct innovative interdisciplinary empirical work to better understand associations among minority stress, resilience, and neurobiology in LGBTQ people of color. I am forever grateful."

—Luis Parra, MA
APF Wayne F. Placek Grantee

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3 QUESTIONS FOR ARLIN HATCH

SAMHSA's first Senior Psychologist aims to improve care for people with serious mental illness and substance use disorders by better disseminating evidence-based practices

BY TORI DEANGELIS

As the federal agency charged with leading efforts to advance the nation's behavioral health, the Substance Abuse and Mental Health Services Administration (SAMHSA) seeks to reduce the impact of substance use and mental illness on American communities. Addressing that challenge is a main priority of Arlin Hatch, PhD, who in July 2018 became SAMHSA's first Senior Psychologist.

Hatch, who works within SAMHSA's Office of the Chief Medical Officer, was hired as part of an effort to improve clinical services on a national scale for those in greatest need of mental health and substance use treatment, including those who are homeless or at risk of suicide. (The office reports directly to Elinore F. McCance-Katz, MD, PhD, the agency's assistant secretary for mental health and substance use.)

Hatch will also help represent the agency in federal and public capacities and is lending his expertise to a high-level, congressionally mandated committee aimed at coordinating mental health care across federal agencies.

Hatch brings strong clinical experience to the post. A 2002 graduate of Brigham Young University's clinical psychology doctoral program, he has served in a variety of clinically oriented leadership positions in the U.S. Air Force and U.S. Army, for the state of Utah and most recently with the U.S. Public Health Service, where he serves as executive officer for one of five mental health teams that respond to nationally declared emergencies such as natural or man-made catastrophes.

Hatch is enthusiastic about his new position for many reasons, including a personal one: Members of his own family have struggled with serious mental illness and substance use. "I'm passionate about psychology's role in reducing the impact of mental and substance use disorders on America's communities," he says.

SCOTT SUCHMAN

The *Monitor* asked Hatch about his role and how he plans to use his psychology background to best help those under SAMHSA's purview.

How can SAMHSA better assist people who are in greatest need of treatment for mental health and substance use disorders?

One important way is by contributing to the Interdepartmental Serious Mental Illness Coordinating Committee, an unprecedented federal and nonfederal collaboration made up of leaders from 10 federal departments as well as public stakeholders such as researchers, providers, patients, families, judges and law enforcement officers. The committee discusses and takes actions to better coordinate the administration of mental health services for adults with serious mental illness and children with serious emotional disturbance and is also working to implement 45 recommendations made by the nonfederal committee members.

The recommendations have been assigned to five interagency teams that have already begun to prioritize the recommendations and take steps to address them. It's a major step forward because it means federal agencies involved in mental health issues are working together rather than in silos.

Another way is through SAMHSA's "technology transfer" centers—two newly launched centers on mental health and substance use prevention that join a third on addiction already in existence. The purpose of the centers

is to provide access to free or low-cost resources, tools, training and technical support to help psychologists and other practitioners implement the best evidence-based practices available. These largely virtual centers are being tailored to fit the needs of clinicians and others across 10 national regions. The plan is to have a single entry point on samhsa.gov through which service providers can access them.

What other projects are you involved in that could impact psychologists?

I am exploring ways to expand psychology's footprint within the public mental health system, for example, by providing leaders and other stakeholders with information on the value that psychologists can add to the system. Psychologists are uniquely qualified to enhance clinical services for those most burdened by serious mental illness and serious emotional disturbance in ways that extend well beyond provision of direct care—for example, as clinical directors, trainers and supervisors who champion quality, evidence-based practice that will enhance clinical outcomes. As a profession, we are also well equipped to lead programmatic evaluation and quality improvement efforts, and to use implementation science to help effect change at the organizational and systems levels.

In addition, I am spearheading a project to develop a public domain guide for mental health clinicians. It would provide an overview of cognitive-behavioral therapy (CBT) for treating people with serious mental illness—one of the approaches with strong empirical support. The guide would help clinicians build on prior training in CBT and, in addition, would direct resource-strapped providers and public mental health systems toward additional assistance in implementing the range of evidence-based practices, for example, through SAMHSA's training and technical assistance centers, peer consultation opportunities and formal in-person training.

How will you apply your previous experience to your post?

The role of Senior Psychologist is a cross between one's experience and personal interests and where those intersect with SAMHSA's priorities. Because of my background in the Air Force and the Public Health Service, I will be reaching out to the Department of Defense, the Department of Veterans Affairs and other veteran and military entities on shared priorities. For example, we can work together on efforts to reduce the number of military and veteran suicides. I am also bringing my military and veteran perspective to the work of the Interdepartmental Serious Mental Illness Coordinating Committee.

In addition, I'm working to establish relationships with relevant national professional organizations such as APA. I have met with APA executives to determine shared priorities and tap into APA's extensive brain trust. For example, SAMHSA and APA could collaborate on topics such as best practices for demonstration projects and implementing them so they are of maximum use to busy clinicians. Other mutual priorities include promoting nonpharmacological treatment approaches for pain management and opioid addiction, and expanding the integration of psychologists into primary care and throughout the community mental health system. ■

● **To find out more** about SAMHSA's new Technology Transfer Centers, Centers of Excellence and other initiatives, visit www.samhsa.gov.

HOW VIDEO MAY INFLUENCE JURORS' DECISIONS ABOUT POLICE DEFENDANTS

The use of smartphones, "dash cams" and other video recording technology appears to be leading the way to a new era of police accountability

BY MARGARET C. STEVENSON, PhD, AND CYNTHIA J. NAJDOWSKI, PhD

In 2014, Chicago police officer Jason Van Dyke shot and killed Laquan McDonald, a 17-year-old black youth. In his police report, Van Dyke claimed that McDonald had pointed a knife toward Van Dyke and advanced at him, at which time he shot McDonald in self-defense. Yet, video from a camera mounted on a police cruiser dashboard revealed that McDonald was actually walking away from Van Dyke when the officer began shooting, and he continued to shoot while McDonald lay on the ground. After determining that nine of the 16 bullets fired entered McDonald's back, the Cook County coroner ruled McDonald's death a homicide.

Thirteen months later, Van Dyke was charged with first-degree murder. It was the first time in almost 35 years that a Chicago police officer was charged with murder for a death caused while on duty. The significant turnaround in the handling of such cases was likely due to the dash-cam video of Van Dyke killing McDonald. In recent years, many instances of police-inflicted injury and death have been captured by dash cams, bodycams, smartphones and surveillance cameras. Yet little is known about how such video influences outcomes for police who go to trial as defendants.

Cases like the murder of Laquan McDonald raise a variety of issues relevant to understanding jury decision-making in the trials of police defendants. Among them is intense public anger. The video showing McDonald's murder led to public outrage and mass protests over the next several years in Chicago, as well as a growing distrust of the police. This phenomenon has implications for understanding the attitudes of citizens in the jury pool, who may be more skeptical of police than in the past.

In addition, because a video of an incident of police violence may be circulated widely before an officer's trial begins, it may be difficult to identify jurors who have not seen the video or its resulting media coverage, or who have at least remained unbiased by such pretrial publicity. Even after jurors are seated in a trial, it is important to ensure they are not exposed to publicity while the trial is in progress.

AT ISSUE

Is the proliferation of video technology changing outcomes in contested cases of police brutality?

The growth of video technology also has increased the likelihood that video evidence of injurious or deadly, yet contested, police interactions will be introduced during trial, directly affecting jurors' decisions. Although jurors have been found to perceive police witnesses as more credible than lay witnesses, when police testimony is contradicted by video evidence, jurors might be more likely to believe what they see with their own eyes. Jurors generally find video evidence to be particularly reliable and convincing, in part because they consider video to be a reflection of objective reality. Indeed, one juror in Van Dyke's case—the only black juror—indicated that Van Dyke should never have testified because he came off as not believable.

It has long been recognized that advances in technology can be an impetus for changes in laws and policy. As the murder of Laquan McDonald and other cases like it illustrate, technological advances also have the potential to shape justice through juror decision-making. In October 2018, nearly four years after McDonald's death, a jury found Van Dyke guilty of second-degree murder and 16 counts of aggravated battery—a conviction that bucked historical patterns and might reflect the beginning of a new trend toward police accountability. ■

● **An earlier version** of this article originally appeared on the OUPBlog at https://blog.oup.com/2018/12/how-video-influence-juror-decision-making-police-defendants/. For further reading, see *Criminal Juries in the 21st Century: Psychological Science and the Law,* an edited volume published in 2018 by Cynthia Najdowski and Margaret Stevenson.

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

Research is exploring how specific factors, including physicians' use of patronizing language and patients' past experiences with discrimination, affect patients' perception of treatment.

CE

CONTINUING EDUCATION HOW DOES IMPLICIT BIAS BY PHYSICIANS AFFECT PATIENTS' HEALTH CARE?

BY TORI DEANGELIS

The theory of aversive racism, first posed in the 1970s, encompasses some of the most widely studied ideas in social psychology. According to theory developers Samuel L. Gaertner, PhD, of the University of Delaware, and John F. Dovidio, PhD, of Yale University, people may hold negative nonconscious or automatic feelings and beliefs about others that can differ from their conscious attitudes, a phenomenon known as implicit bias. When there's a conflict between a person's explicit and implicit attitudes—when people say they're not prejudiced but give subtle signals that they are, for example—those on the receiving end may be left anxious and confused.

Lab studies have long tested these ideas in relation to employment decisions, legal decisions and more.

CE credits: 1

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

1. Discuss research that suggests some health-care providers have implicit bias toward various patient groups.

2. Discuss how certain combinations of physicians and patients lead to poorer interactions.

3. Describe possible interventions to improve patient-physician interactions.

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

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In 2003, the concepts received an empirical boost from "Unequal Treatment," a report from an Institute of Medicine (IoM) panel made up of behavioral scientists, physicians, public health experts and other health professionals. The report concluded that even when access-to-care barriers such as insurance and family income were controlled for, racial and ethnic minorities received worse health care than nonminorities, and that both explicit and implicit bias played potential roles.

"The report really opened a lot of doors to further research on bias in care," says Dovidio, who served on the IoM panel.

Psychologists and others are now building on the IoM findings by exploring how specific factors, including physicians' use of patronizing language and patients' past experiences with discrimination, affect patients' perception of providers and care. Research is also starting to look at how implicit bias affects the dynamics of physician-patient relationships and subsequent care for patients with particular diseases, such as cancer and diabetes.

Tackling this topic can be difficult because of the real-world challenges of getting medical professionals to engage in these studies, researchers say. Another problem is that the main measure used to assess implicit bias, the Implicit Association Test (IAT), has come under fire in recent years for reasons including poor test-retest reliability and the argument that higher IAT scores do not necessarily predict biased behavior.

While this disagreement remains to be resolved, researchers are starting to use other measures and techniques to assess implicit bias, as well as new methodologies to track patient attitudes and outcomes. And while the predictive power of the IAT may be relatively small, in the aggregate, even small effects can have large consequences for minority patients (see *Journal of Personality and Social Psychology*, Vol. 108, No. 4, 2015).

Implicit bias is called implicit for a reason—it's not easy to capture or to fix, says Michelle van Ryn, PhD, an endowed professor at Oregon Health & Science University (OHSU). But it is worth a deeper dive because of its implications for patient treatment on both a personal and a health-care level, she says.

"Implicit bias creates inequalities through many difficult-to-measure pathways, and as a consequence, people tend to underestimate its impact," says van Ryn. "This kind of research is essential in making real progress toward health-care equality."

HOW BIAS PLAYS OUT

One of the first psychologists to apply theories of aversive racism and implicit bias in a real-world medical setting is social psychologist Louis

A. Penner, PhD, senior scientist at Wayne State University's Karmanos Cancer Institute. Along with Dovidio, Gaertner and others, he asked patients and physicians before a medical appointment about their race-related attitudes, and measured physicians' implicit bias. The researchers also video-recorded patients and physicians during the appointment and asked them to complete questionnaires afterward.

The team found that black patients felt most negatively toward physicians who were low in explicit bias but high in implicit bias, demonstrating the validity of the implicit-bias theory in real-world medical interactions, says Penner (*Journal of Experimental Social Psychology,* Vol. 46, No. 2, 2010).

Researchers are also examining ways that providers may inadvertently demonstrate such bias, including through language. In a study in *Social Science & Medicine* (Vol. 87, 2013), Nao Hagiwara, PhD, at Virginia Commonwealth University, and colleagues found that physicians with higher implicit-bias scores commandeered a greater portion of the patient-physician talk time during appointments than did physicians with lower scores. Those findings are consistent with research by Lisa A. Cooper, MD, of Johns Hopkins University School of Medicine and colleagues, who found that physicians high in implicit bias were more likely to dominate conversations with black patients than were those lower in implicit bias, and that black patients trusted them less, had less confidence in them, and rated their quality of care as poorer (*American Journal of Public Health*, Vol. 102, No. 5, 2012).

The individual words that physicians use can also signal implicit bias, Hagiwara has found. She looked at physicians' tendency to use first-person plural pronouns such as "we," "ours" or "us" when interacting with black patients. According to social psychology theories related to power dynamics and social dominance, people in power use such verbiage to maintain control over others of lesser power. In line with those theories, she found that physicians who scored higher in implicit bias spoke more of these words than colleagues lower in implicit bias, using language such as, "We're going to take our medicine, right?" (*Health Communication*, Vol. 32, No. 4, 2017).

SPECIFIC DISEASES AND POPULATIONS

Another line of research is investigating physician and patient attitudes among patients with specific diseases. This work is shedding more light on the role that patients may play in poor communication and relationship outcomes, and eventually aims to show whether poor communication affects health outcomes.

In a study of black cancer patients and their physicians, Penner, Dovidio and colleagues found that, overall, providers high in implicit bias were less supportive of and spent less time with their patients than providers low in implicit bias. And black patients picked up on those attitudes: They viewed high-implicit-bias physicians as less patient-centered than physicians low in this bias. The patients also had more difficulty remembering what their physicians told them, had less confidence in their treatment plans, and thought it would be more difficult to follow recommended treatments (*Journal of Clinical Oncology,* Vol. 34, No. 24, 2016).

In another study, Penner and colleagues looked more specifically at how past discrimination may influence black cancer patients' perception of care and their reactions to it. Patients who reported high rates of past discrimination and general suspicion of their health care talked more during sessions, showed fewer positive emotions and rated their physicians more negatively than those who reported less past discrimination and lower suspicion (*Social Science & Medicine,* Vol. 191, 2017).

"Individually and jointly, the race-related attitudes of both nonblack physicians and their black patients negatively affect what transpires during their medical interactions and the outcomes that follow them," Penner says.

Meanwhile, Hagiwara is focusing on black patients with Type 2 diabetes as part of a four-year study funded by the National Institute of Diabetes and Digestive and Kidney Diseases (*BMJ Open,* Vol. 8, e022623, 2018). She and colleagues will assess the role of physician communication behaviors as they relate to patients' trust in and satisfaction with their providers, and then see how those interactions relate to health outcomes.

In addition to using surveys and video recordings of

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One study has found that physicians with higher implicit-bias scores commandeered more talk time during appointments than physicians with lower scores.

patient-physician interactions, the team will attempt to gain a deeper understanding of patient reactions than previous studies. They'll do this first by having patients view the videos without interruption as the team gathers their physiological responses, including heart rate, skin conductance and eye gaze. Then, patients will watch the video a second time, stop the videos whenever they have a positive or negative reaction to them, and explain why. The team will also stop the videos in places where they recorded patients' physiological responses and ask patients additional questions to ascertain possible nonconscious responses. Six months later, the team will examine how those findings influence health behaviors and outcomes by examining patients' lab values, diabetes complications, and self-reported treatment adherence—the first study to directly assess such health outcomes.

Focusing intensively on one disease "will help our understanding of the role of implicit bias in clinical outcomes," Hagiwara says.

MEDICAL STUDENTS AND MORE

While most implicit-bias studies in health-care treatment have been conducted with black patients and nonblack providers, other researchers are investigating implicit bias in relation to other ethnic groups, people with obesity, sexual and gender minorities, people with mental health and substance use disorders, older adults and people with various health conditions.

Medical school is one arena where this work is taking place. OHSU's van Ryn, who is founder and head of a translational research company called Diversity Science in Portland, Oregon, is principal investigator in a long-term study of medical students and residents examining whether and how the medical school and residency training environments might influence future doctors' racial and other biases. For the past eight years, she, Dovidio and colleagues have been surveying a cadre of 4,732 medical students attending 49 of the nation's 128 allopathic medical schools, who first entered medical school in 2010.

The study, funded by a number of sources, including the National Institutes of Health, asks students on a regular basis about their implicit and explicit attitudes toward racial and other minorities, and how these views might change over time.

In several studies using this data set, the team has found that student reports of organizational climate, contact with minority faculty and patients, and faculty role-modeling were more strongly related to changes in implicit and explicit bias than their experiences with formal curricula or formal training (*Journal of General Internal Medicine,* Vol. 30, No. 12, 2015). These include

KEY POINTS

1. **Research shows that many providers hold some level of implicit bias toward various patient groups, with most studies examining interactions between black patients and nonblack providers.**
2. **Certain combinations of physicians and patients lead to poorer interactions, specifically those in which physicians are high in implicit bias and patients are high in mistrust of the medical system and reported past discrimination.**
3. **Research on interventions is still developing, but one promising strategy includes helping patients feel that they are on the same team as the provider.**

studies headed by health services researcher Sean Phelan, PhD, of the Mayo Clinic, that examine medical student reactions to patients who are obese and who identify as LGBT. In prospective studies of the initial medical student cohort, he found results similar to those involving race: for example, that students with lower implicit-bias scores were more likely to have had frequent contact with LGBT faculty, residents, students and patients, and that those with higher scores were more likely to have been exposed to faculty who exhibited discriminatory behavior (*Journal of General Internal Medicine,* Vol. 32, No. 11, 2017).

In terms of race, van Ryn's team also found that students who entered medical school with lower implicit-bias scores and many positive experiences with people of different races were likely to build on those experiences during medical school, says Dovidio.

"It's like a ripple effect," he says. "They come into medical school with more positive racial attitudes, so during medical school they feel less interracial anxiety and interact in more positive ways with patients. And those experiences of contact in medical school have an additive effect that goes over and above their earlier contact experiences."

HOW TO INTERVENE

Given the nonconscious and emotional nature of implicit bias, it is not easy to overcome. As a result, designing interventions is tricky, Dovidio says. For example, he, van Ryn and their colleagues found that formal diversity training in medical school has little or no effect on students' levels of implicit bias over time. "It doesn't do harm, but it doesn't do anything positive either," he says.

Such findings suggest the importance of using psychological methods to address psychological problems, Penner adds. "The goal of interventions shouldn't be to confront physicians with their implicit bias and get them to change it," he says, "but rather to make it less important in their interactions."

Promising strategies include those aimed at getting physicians to see a patient as an individual rather than as a stereotyped member of a group, helping patients become more engaged with their treatment and fostering patients' sense of being "on the same team" as their doctor (*Journal of General Internal Medicine*, Vol. 28, No. 9, 2013).

Researcher Jeff Stone, PhD, a professor of psychology at the University of Arizona, is using some of these ideas in workshops he's developed for medical students. "For them, this is about how to improve their skills as a doctor or nurse," he says. "We don't just expose them to these ideas and leave it at that—we have them practice them."

For example, the workshop uses the strategy of individualizing patients to encourage medical students to question stereotypes about a patient's ethnic group, such as the notion that Hispanics don't adhere to medical advice. Instead, a medical student may be told to ask all patients specific questions about adherence, like whether they have finished all of their medications or have made an appointment for a referral. Stone has just completed a study related to this work and is now examining whether changes in implicit bias correspond with better treatment of patients in the clinic.

Another promising intervention, the prejudice habit-breaking intervention, is based on a theory developed by Patricia G. Devine,

FURTHER READING

Racial Biases in Medicine and Healthcare Disparities
Dovidio, J., et al.
TPM, 2016

Examining the Presence, Consequences, and Reduction of Implicit Bias in Health Care: A Narrative Review
Zestcott, C.A., et al.
Group Processes & Intergroup Relations, 2016

Implicit Bias in U.S. Medicine: Complex Findings and Incomplete Conclusions
Chisolm-Straker, M., & Straker, H.O.
International Journal of Human Rights in Healthcare, 2017

Doing Harm to Some: Patient and Provider Attitudes and Healthcare Disparities
Penner, L.A., et al.
In D. Albarracin & B.T. Johnson (Eds.), The Handbook of Attitudes, 2nd ed., Vol. 2—Applications, 2019

Research is also looking at how situational factors such as stress and time constraints could activate bias and influence treatment decisions.

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PhD, and William T.L. Cox, PhD, of the University of Wisconsin—Madison. The intervention, which adopts the premise that bias, whether implicit or explicit, is a habit that can be overcome with motivation, awareness and effort, includes experiential, educational and training components. A study by Patrick S. Forscher, PhD, of the University of Arkansas, and colleagues found that compared with controls, people who received the intervention were more likely after 14 days to feel concern about the targets of prejudice and to label biases as wrong, though that awareness later declined. However, in a subsample of original participants two years later, those who received the intervention were more likely than controls to object to an online essay endorsing racial stereotyping, the team found (*Journal of Experimental Social Psychology,* Vol. 72, 2017).

WHAT'S NEXT?

Psychologists who study implicit bias in health care acknowledge there is much more to learn. That includes discovering ways that patient-physician interactions might lead to poorer health outcomes down the road, and conducting research on other populations besides black patients and nonblack physicians. On a more discrete level, it includes achieving a better understanding of how situational factors like stress and time constraints could activate bias and influence treatment decisions.

Researchers also acknowledge that individual interventions are just one way to reduce providers' implicit bias. Equally important are systemic interventions, the mission of van Ryn's company, Diversity Science. The company helps organizations apply the best findings and interventions on implicit bias to create inclusive cultures. Ways they do this include conducting climate assessments using evidence-based tools and questionnaires, giving leaders feedback on that data, and providing ongoing training for all employees, including case demonstrations and refreshers.

Also important is conducting this work with other disciplines and recognizing that environmental factors such as access to transportation and proximity to toxic environments can play significant roles in health disparities, says Dovidio.

"When you put together physicians' implicit bias, geography, patient attitudes, the patient-doctor interaction and organizational, historical and structural factors," he says, "you get a holistic picture of what can cause health disparities and specific avenues to remedy them. Understanding how these processes contribute jointly to health-care disparities," he adds, "is necessary for addressing such a persistent and complex problem—one with life-or-death consequences." ■

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WHAT CAN WE LEARN FROM OUR DNA?

Inexpensive genetic testing is a game changer for psychological research. But is it a research tool, a fortune-teller or both?

BY LEA WINERMAN

Today, nearly every newborn in a U.S. hospital gets a heel prick soon after birth. The blood test screens for rare but serious physical disorders, such as sickle cell anemia and hyperthyroidism, whose worst effects may be mitigated with early treatment. ¶ What if, in addition, a small sample of each baby's saliva was sent out to a lab, where—for just a few dollars—the baby's DNA was analyzed and a multitude of "risk scores" returned? These would not be diagnoses but instead prognostication: This baby is at elevated risk for developing heart disease in 50 years. That baby is more likely than average to suffer from depression or schizophrenia someday. This baby may have a very high IQ—or a low one. ¶ Robert Plomin, PhD, a psychologist and geneticist at King's College London, thinks that future is just around the corner, and he welcomes it. In academic papers and in a new book, "Blueprint: How DNA Makes Us Who We Are," he makes the case that in the very near future, we will be able to know, at birth, something about our risk for developing nearly every imaginable psychological and physical trait and illness—our "polygenic risk scores"—and that this knowledge will help researchers develop new treatments and interventions, and will help all of us live lives better in keeping with our individual natures.

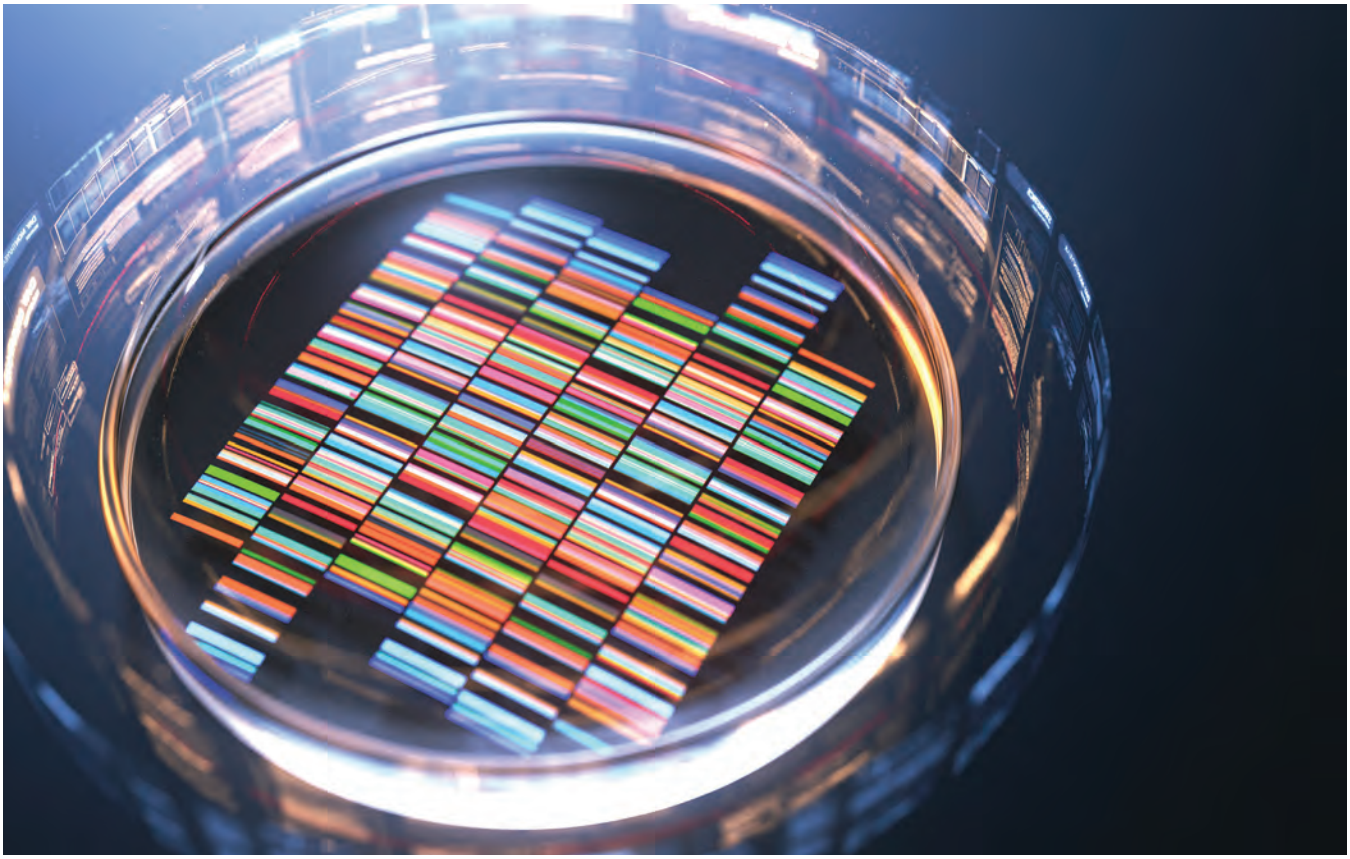
"In 10 years, it will be seen as unethical not to [genotype everyone at birth]," he predicts. "Knowledge is power; forewarned is forearmed."

Critics, meanwhile, see that vision as both hyperbolic and horrifying—scientifically implausible but also a morass of ethical problems. University of Virginia psychologist Eric Turkheimer, PhD, for instance, objects to the crystal ball comparisons and argues that polygenic risk scores do not really tell us more than we could already learn from simply looking at a person's parents' traits.

What's indisputable, though, is that as the cost of DNA genotyping has plummeted over the past half decade or so, research on the genetics of psychological traits has grown exponentially. Researchers have discovered thousands of genetic variations that each contribute a tiny drop to our genetic propensity to a multitude of traits. And, whether these DNA tests can tell us much about an individual newborn's destiny, they are already a useful research tool that is providing new insights into how genes and environments interact, new avenues for understanding how mental illnesses (and other illnesses) develop and new pathways to explore potential treatments.

A HISTORY OF HEREDITY

The road to polygenic risk scores was winding. Scientists have been studying heredity for more than a century, ever since Sir Francis Galton proposed using twins to help untangle the mystery of nature versus nurture. Decades of those twin, adoption and other family studies



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pointed to one overall conclusion: "Everything is heritable," as Turkheimer put it in his "first law of behavioral genetics."

The amount of heritability varies by trait, but for most psychological traits and disorders, it is substantial. Schizophrenia is about 50 percent heritable—that is, genes account for about 50 percent of the variance in the trait across a population. IQ is also about 50 percent heritable. Autism is about 70 percent heritable. And heritability of the Big Five personality traits ranges from about 40 to 60 percent.

But knowing that a trait or disorder is partly heritable only tells you about population-level transmission; it doesn't tell you whether a *particular person* will inherit it. No psychological trait is 100 percent heritable—after all, identical twins share exactly the same genetic code, but they are not the same person. And knowing a trait's heritability doesn't tell you anything about the actual genes—or the environmental mechanisms—that influence it. Researchers could only begin to probe those questions in the 1990s and early 2000s, when DNA genotyping became available.

First, a quick primer: The human genome is made up of about 3 billion base pairs (made up of chemical building blocks called A, C, T and G) on 23 pairs of chromosomes. The vast majority of the genome is identical from person to person, but what's interesting to researchers are the differences—spots called single-nucleotide polymorphisms (SNPs) where, for example, one letter that is usually a G has been switched for a T, or a C has been switched for an A—that contribute to our diversity as a species.

Today, genotyping a person's DNA costs less than $100, and millions of people have sent spit swabs to commercial genetic testing companies.

In its early days, DNA genotyping was very expensive. So, researchers in psychology and other fields turned to a seemingly promising strategy: Rather than try to look for interesting SNPs across a person's entire genome (which would cost too much), they looked at "candidate genes"—genes they had good

reason to think might be related to the trait they were studying. A researcher interested in depression might look at SNPs on one or two genes, for example, that were involved in the serotonin system.

The hope was that these studies would quickly identify "the gene" for depression, attention-deficit hyperactivity disorder (ADHD), IQ and many other traits and disorders.

"The assumption was that single genes would be interesting to work on," says Terrie Moffitt, PhD, a psychologist at Duke University who worked on candidate gene studies in the 1990s and early 2000s.

The strategy didn't work out. Gradually, as most candidate gene studies failed to find anything interesting (or failed to replicate), researchers realized that the problem was that each psychological trait or disorder wasn't linked to just one or two or a dozen genes—but to hundreds or even thousands, each of which contributed only a tiny amount to the trait's heritability. To find all those SNPs, you couldn't just look on candidate genes, you'd have to scan the whole genome. And because the amount of variance that each individual SNP contributed to the trait was so tiny, you'd have to do so across huge subject pools—hundreds of thousands of people—to locate the relevant SNPs.

"From about 2003 to 2012, everyone was just waiting for these large GWAS [genome-wide association studies]," says Moffitt.

Finally, as the cost of genotyping began to fall, those studies became possible, then plentiful. Over the past five years or so, researchers have conducted ever-more and ever-larger GWAS, identifying thousands of SNPs linked with personality, intelligence, depression and a host of other psychological traits and disorders (and, outside of psychology, with physical traits and illnesses, like obesity and heart disease, too).

Today, genotyping a person's DNA, and looking for hundreds of thousands of SNPs, costs less than $100, and millions of people have sent spit swabs to commercial companies like 23andMe to do personal genetic testing. In one of the largest GWAS to date, researchers examined the genomes of more than 1.1 million people—including 23andMe customers as well as people in another huge DNA database, the UK Biobank—to look for genes related to educational attainment. With this huge pool, they identified 1,271 SNPs related to how many years people had spent in school. Each SNP contributed a minuscule amount on its own, but when added together, they explained 13 percent of variance in educational attainment in the sample (*Nature Genetics,* Vol. 50, No. 8, 2018). Also last year, a meta-analysis of GWAS on depression, with nearly 150,000 people with depression and 350,000 controls, found 44 genes associated with major depressive disorder (*Nature Genetics,* Vol. 50, No. 5, 2018). And a study with 135,000 people found 35 genes associated with lifetime cannabis use (*Nature Neuroscience,* Vol. 21, No. 9, 2018). These are just a small sample of the mushrooming number of GWAS.

POLYGENIC RISK SCORES COULD HELP RESEARCHERS WHO WANT TO BRING PERSONALIZED MEDICINE TO MENTAL HEALTH TREATMENT—HELPING TAILOR TREATMENT TO INDIVIDUALS.

Polygenic risk scores, then, are a way to take the information from GWAS and apply them to an individual. "Polygenic" means "many genes," and that's what these risk scores include. Once you genotype a person's DNA, you can comb through it for SNPs that have—through large GWAS—been associated with a particular trait. Then you simply add up the number of these SNPs in the DNA, while weighting them appropriately because some SNPs are more strongly associated with a trait than others. The resulting number is the person's polygenic score for that trait. It's usually expressed as a percentile—as in, this person is in the 70th percentile of genetic risk for developing schizophrenia, for example, or the 90th percentile for academic achievement.

AN ETHICAL MINEFIELD

So, how much do these scores matter and what do they tell us? The answer depends on who you ask. Turkheimer, the

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skeptic, is not impressed. Right now, he points out, the largest GWAS—the one on educational attainment—can explain 13 percent of population variance in that trait. Other GWAS on psychological traits and disorders explain less—about 7 percent of the variance in schizophrenia and 3 percent in depression, for example. While that's significant for a single variable, Turkheimer points out that it's far less than the actual heritability of these traits, which we already knew from twin and adoption studies was high.

"If anything, what we've found is smaller than we'd have expected in, say, 1990 [before researchers began working with DNA]," he says. "They don't predict very well."

Plomin, on the other hand, who calls himself a "cheerleader" for polygenic scores, takes an expansive view. He believes that as GWAS continue to get larger and researchers refine their techniques for calculating risk scores, their predictive power will continue to improve, right up to the limits of heritability itself.

That's a technical disagreement, but the larger debate is philosophical and ethical as well.

Plomin believes these scores will be invaluable to parents looking for guidance in raising their children, and for people looking for insight into their own strengths and weaknesses. Parents with a child at high risk for dyslexia, for example—a disorder that's often not discovered until children are already having trouble in school—could instead get them early reading help and head off the worst consequences. People who know that they are at high risk for alcohol or other substance use disorders could take more care to avoid alcohol and drugs early on.

Polygenic scores could determine early on if a child is at high risk for dyslexia, thus enabling early treatment and intervention.

But Turkheimer and others worry about a dangerous endgame to these predictions. Take the dyslexia example, for instance. For every child correctly identified as dyslexic via their DNA, several other children might be misidentified—after all, polygenic risk scores only indicate risk, they are not diagnoses. What are the consequences of identifying children as "high-risk" for disorders they never develop? And, in a more extreme example, what if, as some have suggested, polygenic risk scores for intelligence became part of the criteria used

to track children into different educational paths—college versus trade school? "The suggestion to put kids in schools because of their polygenic risk scores is exactly the same as assigning them to schools based on their parents' IQ scores, except not as good, because the predictions aren't as good. To me, that's a transparently terrible outcome," Turkheimer says.

More broadly, focusing on what genetics can tell us about individual differences plays into a view of the world that dangerously discounts the importance of environment, says Jonathan Kaplan, PhD, a philosopher of science at Oregon State University who studies the ethics of behavioral genetics research. For example, focusing on what GWAS tell us about IQ and educational attainment in an individual can discount the importance of attending a safe, functional and well-funded school.

"That's the worry. It's not that there's anything wrong with the research, but it tends to crowd out other explanations in ways that are deeply problematic," he says.

RESEARCH IMPLICATIONS

These deep—and important—societal implications aside, most researchers do agree that GWAS and polygenic risk scores are increasingly useful research tools.

First, for medical research, locating thousands of new genes related to mental health and other disorders could give scientists new avenues to look for novel medications and other treatments. Of course, that was once the hope behind candidate gene studies—that by finding the one or two genes responsible for a disorder and looking at the systems those genes were involved in, we'd learn more about how to treat the disorder. The fact that most mental health disorders turned out to be influenced by many genes significantly complicated that picture, but it didn't erase it.

"It helps us understand the biology behind these disorders," says Gerome Breen, PhD, a psychiatric geneticist at King's College London. "Recent studies are helping us broaden our thinking and approach, in depression for example, and think about different biological processes than we had before. It could get us away from the serotonin-dominant approach."

RINO CD Z/GETTY IMAGES

RECENT RESEARCH HAS SHOWN THAT THERE IS SIGNIFICANT OVERLAP IN THE GENES INVOLVED IN MANY DISTINCT MENTAL DISORDERS, INCLUDING SCHIZOPHRENIA, BIPOLAR DISORDER, ADHD AND DEPRESSION.

It could also influence the way psychologists and others conceptualize and categorize mental illness. Recent GWAS, for example, have shown that there is significant overlap in the genes involved in many distinct mental disorders, including schizophrenia, bipolar disorder, ADHD and depression (*Science*, Vol. 360, No. 6395, 2018). More results like these could lead psychologists, psychiatrists and other researchers to rethink the diagnostic distinctions between these disorders.

Finally, polygenic risk scores

could help researchers who want to bring personalized medicine to mental health treatment—helping tailor treatment to individuals. For example, Breen is interested in how polygenic risk scores might help predict schizophrenia patients' response to treatment. In one study, he found evidence that among schizophrenia patients experiencing first-episode psychosis, those with higher polygenic risk scores for the disorder were more likely to have depressive symptoms and lower global functioning before treatment; but also, they tended to show more improvement in symptoms after treatment compared with patients with lower polygenic risk scores (*Translational Psychiatry*, Vol. 8, No. 1, 2018).

Steven Hollon, PhD, a psychologist at Vanderbilt University in Tennessee who has spent decades studying depression treatment, is excited by these possibilities. His background is not in genetics, but he is teaming up with Breen and King's College London psychologist Thalia Eley, PhD, to devise a study that will look at how polygenic risk scores might predict depression patients' responses to a behavioral treatment versus medication. Previous research, he says, has shown that some patients do better with behavioral treatment and others with medication, but right now, there are few good ways to predict which patients will fall into which category. Their grant proposal is not yet funded, but Hollon has high hopes for the research method.

"Twenty years ago, we couldn't have imagined this," he says.

In another line of research, polygenic risk scores have also—perhaps counterintuitively—caught the attention of psychologists and other social scientists who want to understand more about how we are shaped by our environments as well as our genes.

For decades, the main way to conduct such research was through twin and adoption studies. If you wanted to know how parenting affected a particular outcome in children, for example, you could look for identical twins raised in different families and see how they differed on that outcome, or you could compare identical to fraternal twins. It's an effective method, but with a limited participant pool.

Polygenic risk scores, in theory, mean that you could run similar studies in the general population, by using the risk scores as a covariate to control for genetics.

For example, in one study, Moffitt, her colleague and spouse Avshalom Caspi, PhD, and postdoc Jasmin Wertz, PhD, are combining polygenic risk scores for educational attainment with long-running cohort studies in New Zealand and the United Kingdom to look at how parenting affects children's lifetime risk for antisocial behavior. (Many researchers are interested in using these educational attainment scores to study other areas because the educational attainment GWAS is the largest to date, and thus has the best predictive power.

And because educational attainment is related to so many traits, it can be used as a proxy to study many factors that are statistically linked to education level, including criminal behavior, longevity and more.)

"We take the mother's DNA and calculate the educational attainment genetic score," Moffitt explains. "Then we look at measures of what she's doing—we do home visits and interview parents about how often they read books, that sort of thing." Then they look at the children's DNA and outcomes, such as whether they have a criminal record. "Behavioral geneticists would say, sure, smart kids do well because they're born to smart parents. But what we're able to do by controlling for polygenic risk scores is to say that reading books matters, music lessons matter—quite apart from genetics," Moffitt says.

Studies like this one point to the broad reach of polygenic risk scores as a research tool. To skeptics like Turkheimer, that's where their importance lies. "There's all kinds of interesting social science you can do when you have these genetic estimates," he says. To champions like Plomin, meanwhile, they're yet more evidence that all psychologists—even those who have never considered integrating genetics into their work—should be paying attention to the field.

"All psychologists should be taking the opportunity to incorporate DNA into your research," Plomin says. "It costs what, $100? fMRI costs maybe $500 an hour. Any sample a psychologist studies, if you don't collect DNA, you're doing yourself a real disservice." ■

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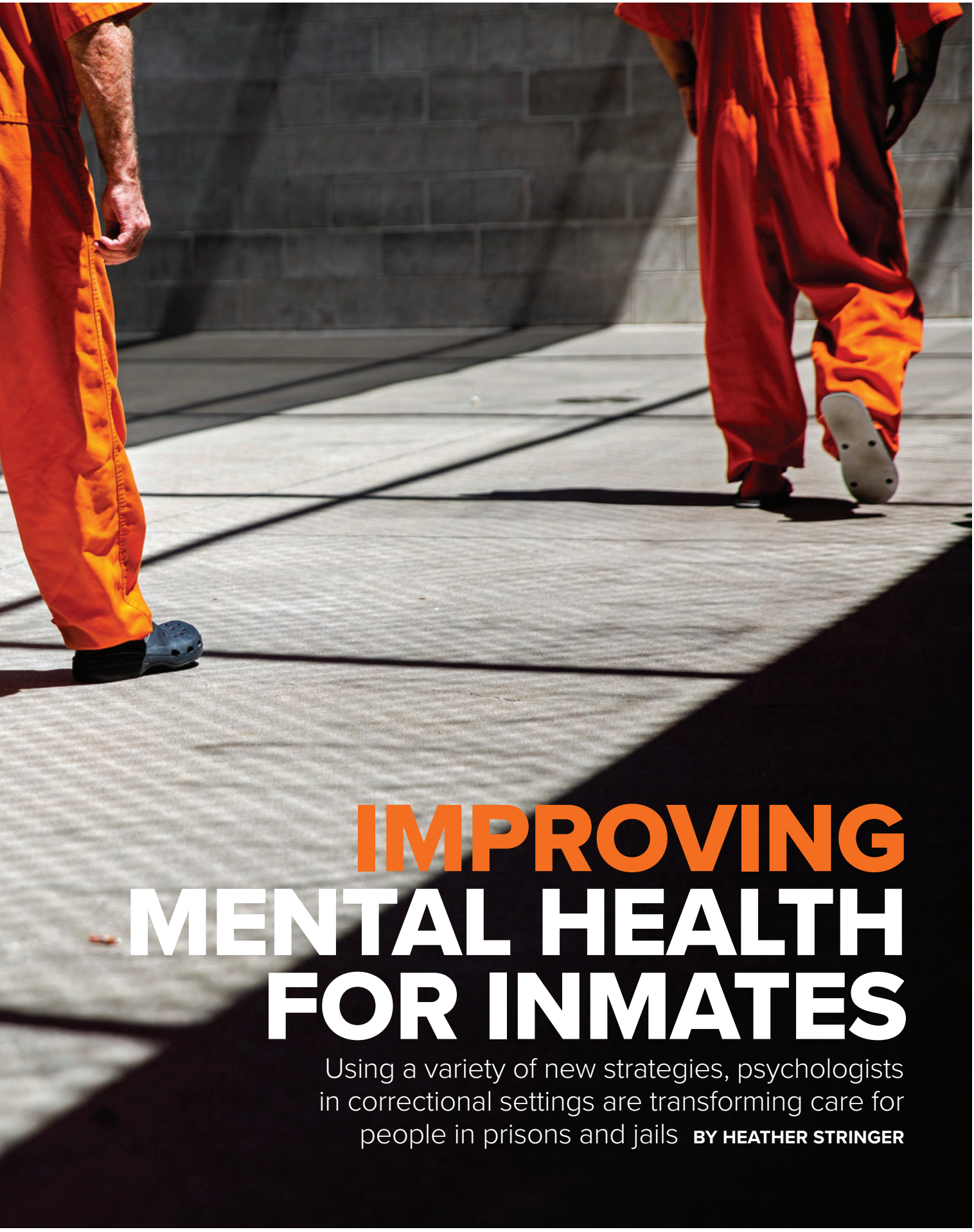

IMPROVING MENTAL HEALTH FOR INMATES

Using a variety of new strategies, psychologists in correctional settings are transforming care for people in prisons and jails **BY HEATHER STRINGER**

PAT SUTPHIN/THE TIMES-NEWS VIA AP

Jamycheal Mitchell, 24, had not been taking his schizophrenia medication when he was arrested for stealing a bottle of Mountain Dew, a Snickers bar and a Zebra Cake from a 7-Eleven. After waiting more than a month in jail, he was found to be incompetent to stand trial due to mental illness and ordered to go to a state hospital for "competency restoration," a combination of psychiatric medication, mental health treatment and education about the legal process. But no beds were available, and Mitchell's condition deteriorated as weeks turned into months while he waited in jail. He refused to eat and take medication. Four months after his arrest, Mitchell was found dead in a cell covered in urine and feces. He had died of cardiac arrhythmia related to wasting syndrome, a disorder characterized by extreme weight loss. ¶ Cases like this are so tragic because they are preventable, say psychologists who advocate for more effective mental health services in correctional facilities. The unfortunate truth is that despite improvements over the past 30 years, the correctional system continues to struggle to meet the vast needs of the increasing number of inmates with mental health conditions, says Thomas Fagan, PhD, professor emeritus at Nova Southeastern University in Florida and a former administrator for the Federal Bureau of Prisons.

About 37 percent of people in prison have a history of mental health problems, according to a 2017 report from the U.S. Department of Justice. More than 24 percent have been previously diagnosed with major depressive order, 17 percent with bipolar disorder, 13 percent with a personality disorder and 12 percent with post-traumatic stress disorder. The numbers are even higher for people in jail, where one-third have been previously diagnosed with major depressive disorder and almost one-quarter with bipolar disorder.

"We lock up people with mental health problems when we should really be treating these people in the community," says Fagan. "In the absence of that, prisons and jails become *de facto* treatment centers."

As a result, psychologists, psychiatrists and social workers have become essential mental health providers in correctional settings, and they can be a driving force for new programs in state and federal facilities, he says. Here is a look at some of the latest evidence-based approaches from psychologists.

NEW THINKING PATTERNS

Several psychologists are focused on keeping people with mental health problems out of correctional facilities. Among them is Robert Morgan, PhD, a psychology professor at Texas Tech University in Lubbock who is testing a new prison-based program that helps inmates learn to avoid behaviors that may lead to re-incarceration after they are released. Morgan's program, Changing Lives and Changing Outcomes, seeks to address antisocial thinking and behavior patterns—which he calls "criminalness"—among inmates who have been diagnosed with mental illnesses. The program is novel because it diverges from the traditional belief that providing better mental health care alone will reduce the chances of criminal behavior patterns. Morgan contends that it's critical to combine mental health care and treatment for criminalness because inmates

CHARLES REX ARBOGAST/AP PHOTO

An inmate of the Cook County Jail in Chicago, which houses some people with mental disorders.

can learn not only how to cope with mental illness, but also practical life skills such as how to challenge antisocial thought patterns and to develop healthy connections with others.

"We learned through a series of studies that people with mental illness in the justice system are there in part because they present with criminal risk in similar ways to those who are not mentally ill—they interpret interpersonal situations differently than noncriminals," says Morgan. For example, this population is more likely to see someone bumping into them as asserting dominance rather than as an accident, Morgan explains.

Morgan's ideas were born out of years of clinical work in prisons, where he witnessed the struggles people faced, especially those with mental illness. In federal and state prisons at both minimum and supermaximum levels of security, he saw that people with mental illness were at increased risk of victimization, psychiatric rehospitalization and criminal recidivism. They also had trouble adjusting to the institutional environment, and often their psychiatric symptoms worsened.

On the basis of that experience, Morgan wanted to help incarcerated people with mental illness stay out of prison once released; nearly 80 percent of all released prisoners are arrested again within six years, according to the U.S. Bureau of Justice Statistics. In a pilot study, he tested his model of addressing both psychiatric and criminogenic needs with 47 male inmates who were in prison or a residential facility. The six-month program included 155 hours of group and individual therapy sessions in which clinicians taught participants about healthy ways of dealing with anger and fear, how to interpret situations, medication adherence and other skills. He found that participants experienced decreased depression, anxiety, hostility, paranoid ideation, psychoticism and reactive criminal thinking (*Criminal Justice and Behavior*, Vol. 41, No. 7, 2014).

Morgan's team then tried the program with a larger sample of 169 participants in residential facilities. This time, they wanted to determine how much of the program content the inmates retained. "This is important for improving community outcomes," says Morgan. "Simply

RICH PEDRONCELLI/AP PHOTO

An inmate is escorted from the mental health treatment unit at the California Medical Facility in Vacaville, California. Inmates at the facility receive individual, group and recreational outpatient therapy.

reducing distress during the course of treatment is a positive step, but that can be very temporary. We wanted to assess if participants were able to learn and retain the information to be applied in their everyday lives."

The team found that most participants increased and retained their knowledge, but those who had lower scores on the quizzes after each module were more likely to drop out of the program (*Psychological Services*, in press). In these cases, clinicians may need to provide more sessions to reduce the risk of dropout. The next step, Morgan says, will be to investigate whether the program reduces recidivism rates.

The program has also been adapted for mentally ill inmates in solitary confinement who can't participate in group sessions. Participants receive written material and worksheets, and clinicians provide brief feedback during mental health rounds. "The goal is to help them learn how to manage their mental illnesses and identify issues that put them at risk of continued segregation," says Morgan, who is evaluating the program.

INFLUENCING CORRECTIONAL POLICIES

University of California, Santa Cruz psychologist Craig Haney, PhD, is exploring ways to reduce the number of people placed in isolation. Through interviews with hundreds of inmates in isolation, many of whom have mental illnesses, Haney has shown that people living in solitary confinement—defined as the absence of meaningful social contact and interaction with others—frequently experience depression, memory problems, difficulty concentrating, irritability and anger. Studies have also shown that stress-related reactions are common, including decreased appetite, heart palpitations and a sense of impending emotional breakdown, as well as sleeplessness, heightened levels of anxiety and paranoia. Over time, isolated inmates can also lose the ability to feel

comfortable around people (*Annual Review of Criminology*, Vol. 1, 2018).

"Longing for the presence of other people and feeling that absence is painful, so these inmates adjust by learning to cope in a world without other human beings," says Haney. "Once they are released, the presence of other people can create anxiety, so paradoxically many self-isolate."

Through his work as an expert witness in numerous court cases, Haney has advocated for reforms that would lead to more humane conditions, including increased mental health care and decreased use of solitary confinement. In 2017, his testimony in a federal case against the Alabama Department of Corrections helped to influence the court's decision to order the state to improve practices and conditions in its prisons. In Georgia, Haney was invited to inspect a prison where he discovered that inmates in solitary confinement were only allowed outside their cells for five hours a week, and some were in darkened cells for months. His report documenting the conditions helped inmates win a settlement in January that allows prisoners to spend four hours outside their cells each day, and to eventually have access to educational classes.

Haney recently turned his attention overseas to find innovative correctional models that could inspire prison reform in the United States. Through the U.S.-Norway Correctional Culture Exchange Program sponsored by the Criminal Justice & Health Consortium at the University of California, San Francisco, Haney regularly travels with a contingent of U.S. correctional officials to Norwegian prisons, where the prisoners' routines mimic normal daily life as much as possible. Inmates have more freedom of movement, can access rehabilitation programs and rarely experience solitary confinement.

STAFF ARE TRAINED TO SEE THAT MANY INMATES, ESPECIALLY THOSE WITH MENTAL ILLNESS, HAVE HISTORIES OF ABUSE AND THAT SUCH EXPERIENCES LEAD TO DISTRUST.

"They also place a tremendous amount of emphasis on the interactions between correctional officers and prisoners," notes Haney. "The officers are more like social workers who get to know inmates rather than enforcing punishments." If a prisoner acts out, officers try to understand what led to the outburst and to address the problem or concern rather than punish the individual.

The results of this positive prison culture in Norway are clear: low turnover among staff and decreased recidivism because inmates are better prepared to re-integrate into society. Visiting prison officials from Alaska, Idaho, North Dakota, Oregon and Rhode Island were so impressed that they have started adopting the Norwegian philosophy in their own prisons by increasing the rehabilitation programming and training their staffs to relate differently to inmates, says Haney.

INTRODUCING TRAUMA-INFORMED CARE

Like Haney, Dave Stephens, PsyD, believes that interactions between correctional staff and inmates significantly influence the mental health of prisoners, and he's improving conditions for inmates by teaching correctional employees about the brain's response to trauma. Through the National Institute of Corrections' training center in Colorado, Stephens has trained more than 100 jail and prison wardens, mental health professionals, caseworkers and nurses on how to communicate with inmates in ways that minimize the chances of retraumatizing individuals who have a history of trauma.

He helps staff understand that many inmates, especially those with mental illness, have histories of physical, sexual or emotional abuse that lead to distrust and a sense of worthlessness. Stephens explains how to halt this cycle by being respectful to inmates and by teaching them what to expect when they encounter new situations.

Correctional officers who conduct pat-down searches, for example, can explain beforehand what they will be doing to the inmate. "This can reduce anxiety and the risk of retraumatizing people who are expecting violation and abusive behavior," Stephens says. He also encourages facilities to provide inmates information at the time of booking about what they might experience psychologically once they are incarcerated and steps to

take if they are having symptoms of anxiety, depression or other types of mental illness.

Stephens sometimes encounters resistance from staff who believe it is not their job to "make things easy for inmates," he says. "But with some explanation and discussion, staff become more open and positive, especially because these strategies create a safer environment for both inmates and employees."

ALTERNATIVES TO HOSPITALIZATION

Forensic psychologist W. Neil Gowensmith, PhD, is taking another tack to improve care for mentally ill offenders: community-based treatment. Rather than relying on overcrowded state hospitals to provide competency restoration services for people with mental health problems who have been accused of misdemeanor offenses or nonviolent felonies, Gowensmith has been advocating for outpatient competency restoration. Through such programs, offenders receive these services from private contractors, outpatient treatment centers or community mental health systems.

To study the feasibility of using these programs in lieu of inpatient programs, Gowensmith, an assistant clinical professor of psychology at the University of Denver, collected data from 16 states that were using outpatient methods of restoring competency. He found that 70 percent of the participants in the outpatient programs achieved competency restoration, compared with roughly 80 percent in state hospitals. The duration of treatment was also comparable between the two settings (*Psychology, Public Policy, and Law*, Vol. 22, No. 3, 2016). "This early research shows that outpatient community restoration programs produce similar outcomes to inpatient programs at a fraction of the cost, and without compromising public safety."

In the study, Gowensmith also found that allowing people to have competency restored in the community did not pose a risk to the public, as measured by the number of negative incidents such as re-arrest or violence, which were very low. "Outpatient programs can also allow individuals to keep their housing and stay more connected to community support systems," he says.

IDENTIFYING SUICIDE PATTERNS

Psychologists are also working with correctional systems to develop better ways to identify inmates who may be at risk of suicide. In 2014, the Bureau of Justice Statistics reported that suicides accounted for 7 percent of state prison deaths. Reducing these numbers has become a high priority, says Sharen Barboza, PhD, vice president of mental health at MHM/Centurion, a company that provides healthcare services to state correctional systems and large county jails.

To better understand who is at risk of suicide, Barboza and her colleagues conducted a study of 925 state prison and jail inmates, comparing those who had attempted with those who had completed suicide. The researchers found that those who had died by suicide tended to be male, older, more educated, married or separated/divorced, at the pretrial stage, committed for a violent crime, not on suicide precautions and not previously on close observation (*Suicide and Life-Threatening Behavior*, Vol. 48. No. 5, 2018).

Although Barboza was not surprised by those characteristics, she was concerned that those who had died by suicide had not previously been identified as at risk. "Inmates may not be inclined to share with staff that they are at risk of suicide because we respond by putting them alone in cells for close monitoring, which can be very isolating," Barboza says.

In an effort to change that, she is working with the National Commission on Correctional Health Care and the American Foundation for Suicide Prevention on a national initiative to improve assessment, training and interventions for inmates who may be at higher risk of suicide. The two organizations are partnering as part of an effort to reduce the nation's annual suicide rate for all people by 20 percent by 2025. So far Barboza has participated in three Suicide Prevention Summits, where she leads the assessment group that is working to develop better suicide-risk screening tools.

"We are seeing more completed suicides in both corrections and the general population nationally, and that is alarming," says Barboza. For her, each suicide is a reminder that finding ways to provide better mental health care to more than 2 million incarcerated people in the United States has the potential to improve—and sometimes save—thousands of lives each year. ■

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WOMEN AT RISK

IMPROVING LIFE FOR PREGNANT INMATES

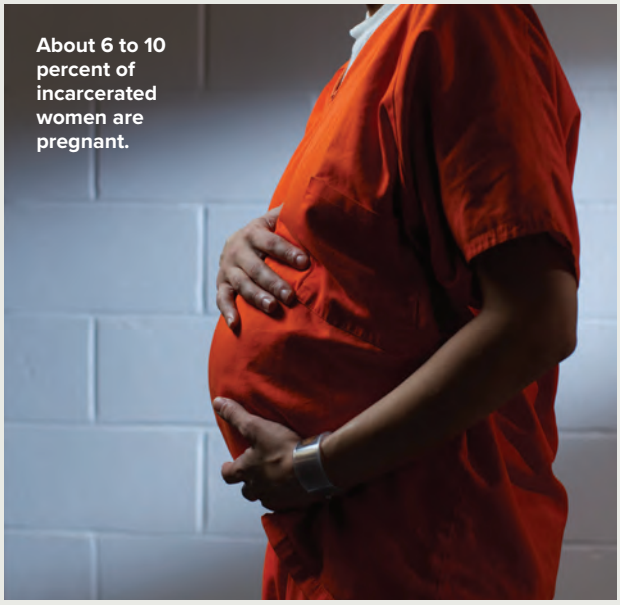
Giving birth while serving a prison sentence can be difficult for numerous reasons, including laboring without the support of a loved one and being separated from one's baby after delivery. But for some women, the conditions are even worse: In more than half of U.S. states, prison staff are legally allowed to shackle a pregnant woman to the bed, even during delivery. Psychologists are using their research to advocate for outlawing such conditions for this increasing population.

To explore the feasibility of providing incarcerated pregnant women with more support, University of Minnesota professor Rebecca Shlafer, PhD, MPH, and colleagues conducted a study in which incarcerated women met with doulas—providers who offer prenatal education, birth planning and emotional support. Qualitative analyses revealed that doulas had the ability to empower clients, establish trusting relationships with them, normalize their deliveries and support them as they were separated from their newborns. The researchers concluded that doula support was a feasible intervention for women in prison (*Public Health Nursing*, Vol. 32, No. 4, 2015).

Research into practice. Shlafer's team then worked with legislators in Minnesota to advocate for a policy that would require the state to offer doula services to pregnant inmates as well as ban the use of restraints in most circumstances. The law went into effect in 2014.

Psychologists are also working to improve the health of incarcerated pregnant women, who research shows are at higher risk than the general population of perinatal complications and delivering preterm infants. A study by psychologist Danielle Dallaire, PhD, for example, explored the effect of providing these women a 45-minute session in which they learned about healthy food choices, the importance of prenatal vitamins, and habits to avoid during pregnancy. The study found that incarcerated pregnant women who participated in such nutritional counseling reported higher birth weights and longer gestational periods for their babies (*Journal of Offender Rehabilitation*, Vol. 56, No. 4, 2017).

In another study, Dallaire, a professor at the College of William and Mary in Virginia, discovered that pregnant women in jail who had the highest number of environmental risks before incarceration—including no health insurance, homelessness, a history of physical or sexual abuse and drug use—were the least successful in obtaining services to address these problems prior to incarceration. They were also the most likely to request services to help with these issues after they were released (*Psychological Services*, in press).



About 6 to 10 percent of incarcerated women are pregnant.

DINA RUDICK/THE BOSTON GLOBE VIA GETTY IMAGES

The college received funding to hire a psychologist to support pregnant women at a local jail, and the women are learning how to find community support for housing, food and health care after they are released.

"There are pregnant and postpartum women in jail who come in with multiple risk factors for poor outcomes once they are discharged. The window of time during incarceration is a critical opportunity to intervene and help these mothers and children change their trajectories," Dallaire says.

—Heather Stringer

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EXPLORING ATHLETES' COGNITIVE PROCESSES

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Mentors for All Walks of Psychology

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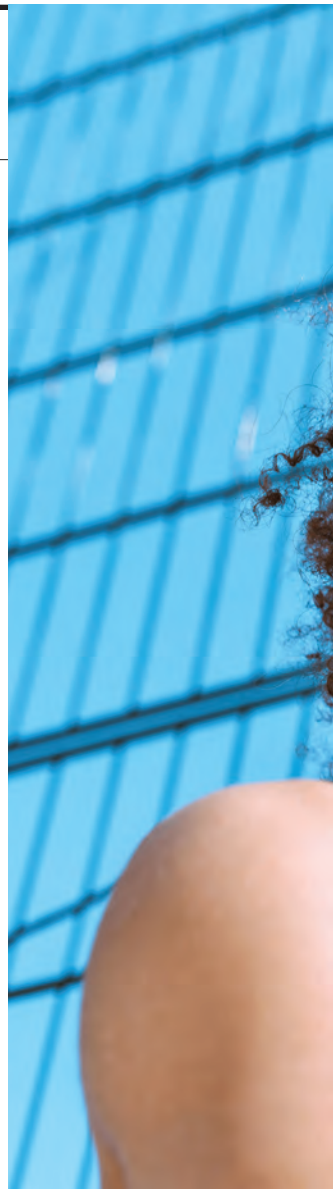
THE ATHLETIC BRAIN

The Sport & Exercise Psychology Lab at Florida State University takes an in-depth look at athletes' cognitive processes

BY KIRSTEN WEIR



Athletes get a lot of attention for their physical attributes: speed, strength, coordination, grace. But excelling in sports requires more than muscles and physical prowess. An experienced athlete takes in important visual cues, tunes out extraneous ones, spots patterns and makes plans—all in the blink of an eye.

In the milliseconds before basketball players take a free throw or baseball players aim a pitch, they fix their gazes on the net or the catcher's mitt. They absorb key information such as the location and distance of their targets, the location of other players or the direction of the wind. Attention researchers use the term "quiet eye" to describe that moment of taking it all in before springing into action.

But when the eyes are quiet, the brain is anything but, explains Gershon Tenenbaum, PhD, who directs the Sport & Exercise Psychology Lab at Florida State University (FSU). In fact, quiet eye is strongly linked to performance. Tenenbaum and his colleagues used eye-tracking technology to follow the gazes of tennis players as they returned serves to their opponents. They found that highly skilled players had longer quiet eye periods than those who played at an intermediate level. And among skilled players, the longer the quiet eye period, the better the shot (*Journal of Sport & Exercise Psychology,* Vol. 40, No. 2, 2018).

Those findings have proven true beyond tennis. The pattern holds across a range of sports, including golf, hockey, basketball and pistol shooting, as Tenenbaum and his colleagues reported in a review of more than two dozen studies of quiet eye (*Journal of Sport & Exercise Psychology,* Vol. 38, No. 5, 2016).

For a researcher like Tenenbaum who is interested in attention, perception, decision-making and other cognitive abilities, quiet eye is a fascinating puzzle to solve. What's happening during that instant? Can people be trained to develop it? How long should it last to maximize the chance of a perfect shot?

"We know that when quiet eye becomes longer, you have a greater chance to perform well. But you can't concentrate forever, and in fact concentrating too long can cause a deterioration in performance," he explains. "So, what's good? We're trying to determine the optimal zone of the quiet eye for novice, intermediate and expert players."

The quiet eye research is just one example of the varied projects in Tenenbaum's lab. Much of the work has direct applications for improving athletic performance, while other studies aim to answer fundamental questions about the ways we process information. But all of Tenenbaum's projects share some things in common: a scientifically rigorous approach to sport psychology, combined with a down-to-earth understanding of how athletes operate. "I bring to my research real questions from the field and ideas that I encountered myself as an athlete and a coach," he says. "I always want to find answers to practical questions."

HIGH-TECH TOOLS

For Tenenbaum, athletics is more than a day job. It's a way of life. Before he became a scientist, he played handball for the Israeli national team for 10 years and coached the sport as well. And while he was coaching and playing, he was earning an undergraduate degree in physical education and sport, then a master's in education research and theory, both at the University of Tel Aviv in his native Israel.

LIGHT FIELD STUDIOS/GETTY IMAGES

From there he made his way to the University of Chicago, where he completed a PhD in measurement, evaluation and statistical analysis, with a minor in psychology.

The flexibility, focus and quick thinking that made him an expert handball player have served him well in science, too. After research positions in Israel and Australia, Tenenbaum came to Florida in 2000. His Sport & Exercise Psychology Lab started small but grew steadily to include some 10 doctoral students. "In the beginning, we had meetings at his house to discuss the research. By the time I graduated, there were too many of us to fit and we had to move to a meeting room at the university," says former student Itay Basevitch, PhD, now a senior lecturer at Anglia Ruskin University in England, who finished his dissertation in 2013. "He had a vision for the lab, and during that time he also started growing the technology."

In his first years at FSU, Tenenbaum used relatively simple equipment: some heart rate monitors, a few handgrips, a biofeedback system. Biofeedback technology measures body functions such as temperature, heart rate variability and skin conductance response (a measure of physiologic arousal). Those measurements are useful in sport psychology research as well as in the sport psychology consulting services that Tenenbaum provides to athletes and teams. With biofeedback training, athletes learn to regulate their physiological responses to improve focus, control stress and perform with greater consistency.

One of the factors the lab studies is "quiet eye": the moment when athletes take in environmental information before they throw a ball or otherwise spring into action.

In the years that followed, Tenenbaum invested in high-tech equipment, including the eye-tracking technology, electroencephalography caps to

measure electrical activity in the brain, and devices to measure reaction time, coordination and visual perception. He makes that equipment available for use by other researchers across the FSU campus, and his own team finds innovative ways to use the technology both in the lab and in real-world settings like tennis courts and soccer fields.

In one current project, for example, PhD student and former lab coordinator Nataniel Boiangin is using stroboscopic glasses—glasses that flash rapidly between opaque and transparent to limit the field of vision—to explore whether training can improve decision-making in tennis players. When an athlete decides when to pass a ball or where to aim a serve, the first step is to gather all the relevant environmental cues. One skill that sets expert athletes apart from novices is the ability to tune out irrelevant bits and pieces in the environment.

Research with eye trackers shows that novice and intermediate tennis players look at more visual fixation points when they're waiting to return serves, Boiangin explains. Their eyes might dart from their opponents' wrists to their rackets to a leaf blowing in the wind. Experts, on the other hand, are able to take in the big picture all at once, seeing patterns without registering every individual detail. "Experts aren't actively looking at each little cue. They're able to chunk that information," says Boiangin, who is finishing his PhD and recently took a position as an instructor in sport and exercise sciences at Barry University in Florida. He theorizes that using the stroboscopic glasses to limit athletes' fields of vision might force them to become more efficient at zeroing in on the cues that count. "Can we teach novice players to focus on the right visual cues?" he asks.

The lab also explores ways to make exercise more enjoyable.

RESEARCH FOCI

The Sport & Exercise Psychology Lab at Florida State University is exploring:

1. **Attention, perception and decision-making in athletes**
2. **Coping with physical exertion**
3. **The effect of exercise on cognitive function**

Despite their interest in technology, Tenenbaum and his students remain skeptical of trendy tech tools. Many high-tech training tools marketed to athletes promise to improve performance, but the evidence for such claims is often limited, Boiangin says. "The problem in our field right now is that the technology is moving more quickly than the research."

In the last few years, for instance, marketers of virtual reality training systems have burst onto the scene, claiming to help athletes hone their skills. But do they work? Tenenbaum, former student Sicong Liu, PhD (now a postdoctoral researcher at Duke University) and colleagues explored whether 3-D technology could improve tennis players' decision-making. The participants judged the direction of tennis serves in videos presented through 3-D glasses. Players wearing the glasses did make quicker decisions than those watching standard videos—but that revved-up reaction time didn't result in greater accuracy (*European Journal of Sport Science,* Vol. 17, No. 5, 2017). "To be fair, 3-D technology is only one step toward interactive virtual reality," Liu says, so it's too soon to rule out the benefits of those fully immersive systems. "But for 3-D technology alone, we don't see much promise for training athletic decision-making."

MAKING EXERCISE MORE FUN

Not all of Tenenbaum's work focuses on athletes. He's also deeply interested in the "exercise" half of the "sport and exercise psychology" in the lab's title. In one line of research, he and his students have investigated factors that make exercise feel like work—and how to make pounding the treadmill less of a slog.

Consider, for example, what happens during the first minutes of a run or a Zumba class you may be engaged in. You're working at a low intensity, and you can enjoy the music, think about what to cook for dinner later, maybe even chat with the person next to you. But as effort and fatigue increase, you shift from dissociative attention, which allows you to disengage from the physical effort, to associative attention, when you just can't ignore your burning lungs and aching muscles. "When it passes that point, you can no longer pay attention to other stimuli. You only pay attention to the pain

GEBERB6/GETTY IMAGES

and the exhaustion," Tenenbaum says. "In several studies we tried to manipulate the situation to see if we can extend the point where they want to stop."

Tenenbaum, Basevitch and colleagues asked participants to squeeze handgrips while blindfolded or not, and while listening to music or not. They found that those who both listened to music and were able to look around freely reported lower perceived exertion than those who had music but no visual stimuli, or visual stimuli but no music. The combination of the senses delayed the shift to associative attention, suggesting that when it comes to distractions, more are better (*Psychology of Sport and Exercise,* Vol. 10, No. 6, 2009).

Many people already listen to music or watch TV while exercising, of course. Could stimulating other senses extend the attention shift to help people enjoy exercising even longer? Tenenbaum's team exposed exercisers to pleasant scents like lavender and peppermint (*The Sport Psychologist,* Vol. 25, No. 2, 2011) and to lemon-flavored mouthguards (*Psychology of Sport and Exercise,* Vol. 25, 2016) to test whether odors and flavors might serve as useful tools for making exercise more pleasant. Unfortunately, neither approach significantly extended the shift to associative attention, though participants in the scent study did report that the aroma of lavender diverted their attention more than did the smell of peppermint or nothing at all. Despite those insignificant findings, Tenenbaum is hopeful that other research may find ways to tap into the five senses to help people enjoy exercise more. "One reason people don't adhere to exercise is because they don't feel happy there," he says. "We're trying to help them increase their effort and at the same time, make exercise more pleasant."

NEW CHALLENGES

After years as a prominent figure in sport and exercise psychology, Tenenbaum has made lots of connections—and he's generous about drawing on those connections to help his students succeed, Liu says. Whether it's introducing students to faculty members with expertise in their areas of interest, networking with elite athletes and potential participants, or unearthing grants to help purchase new equipment, Liu says, "he's very resourceful."

Tenenbaum's background in measurement and statistics is also a strong point for his students, both Liu and Basevitch note. "A lot of students in sport psychology programs are kind of scared of statistics," Basevitch says. But Tenenbaum makes sure his students face the numbers head-on, with a dedicated course on measurement and statistics in sport in addition to the statistics classes required by the department.

"Knowing how to design the research and use the correct analyses is a big strength," Basevitch adds.

After building his lab into a state-of-the-art location for sport and exercise psychology, Tenenbaum is proud of what he's accomplished in Florida. Yet he's decided it's time for a new challenge. In 2019, he'll relocate to Israel and launch a research lab at the Interdisciplinary Center, a private college in Herzliya, Israel. The FSU Sport & Exercise Psychology Lab will live on, with a new crop of researchers to learn still more about the science of sport. "I expect the lab will keep growing and be better and better," he says. ■

COURTESY OF SPORT & EXERCISE PYSCHOLOGY LAB

Dr. Tenenbaum, third from right, with his research team at the lab.

FURTHER READING

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Perceived Effort and Exertion
Hutchinson, J., & Tenenbaum, G. In M. Anshel (Ed.), APA Handbook of Sport and Exercise Psychology (Vol. 2), APA, 2019

Decision-Making in Sports: A Cognitive and Neural Basis Perspective
Tenenbaum, G., & Filho, E. *Reference Module in Neuroscience and Biobehavioral Psychology,* 2017

Research Methods in Sport and Exercise Psychology
Liu, S., & Tenenbaum, G. *Oxford Research Encyclopedia of Psychology*, 2018

● **"Lab Work"** illuminates the work psychologists are doing in research labs. To read previous installments, go to www.apa.org/monitor/digital and search for "Lab Work."

TRAINING PHYSICIANS TO SEE THE PSYCHOLOGY IN MEDICINE

Private practitioner Leona Jaglom has aligned herself with medical teams to address the psychosocial needs of health-care providers

BY HEATHER STRINGER

Elena Gorokhovsky, MD, had barely started her pediatric residency at NewYork–Presbyterian Brooklyn Methodist Hospital (NYP Brooklyn Methodist) when she received the devastating news from Israel that her mother had died. Her demanding work schedule left little time to grieve, and since Gorokhovsky and her husband had just recently immigrated from Israel to the United States, she had few local confidants.

Amid the bustle of the pediatric unit, a psychologist pulled Gorokhovsky aside to ask how she was coping. That interaction was life-changing for her. "From the first moment we started talking, I knew that I had someone who could understand me," says Gorokhovsky, pausing to hold back tears. "She was warm and supportive, and made it clear that she was available anytime."

The psychologist was Leona Jaglom, PhD, who had joined the pediatric medical team in 2009 specifically to help residents navigate the psychological complexities that arise both personally and in their patient populations during the rigorous three-year program. Gorokhovsky now works as an attending pediatrician at the hospital and still confides in Jaglom.

Although Jaglom is primarily an independent practitioner, she spends several hours each week at the hospital. She meets individually with pediatric residents as soon as they start the program to offer herself as a confidential resource and invites them to alert her if a colleague is struggling. In addition to providing personal support, Jaglom joins trainees and attending physicians during weekly interdisciplinary team meetings so they can discuss the psychosocial issues patients and their families may be facing. These can include poverty, stress from living with a chronic illness, family issues and gender-identity dilemmas.

"Dr. Jaglom taught me that there is a lot more to medical care than treating the physical illnesses," says Jennifer Favre, MD, MPH, who graduated from the program in 2018. "If I fail to address the psychosocial issues in a patient's life, then I may be missing an important aspect of why someone is ill or unable to manage the illness."

"Psychologists on the Team" showcases the key roles of psychologists on interprofessional teams, be they in health care, applied settings, government, teaching or any of the scores of other environments psychologists work in.

"Dr. Jaglom taught me that there is a lot more to medical care than treating the physical illnesses."

JENNIFER FAVRE, MD, MPH

For Jaglom, joining a medical team was an ideal opportunity to get out of her office.

"Being in private practice can be an isolating experience, and I had always wanted to work as part of a community," she says. "It's been rewarding and challenging to share ideas and perspectives with physician colleagues because it forces me to consider different points of view and priorities."

JOINING THE MEDICAL TEAM

Jaglom first began working in a hospital setting nearly 30 years ago when the chair of pediatrics at Long Island College Hospital in New York invited her to join a pediatric hematology-oncology medical team. She was a child and adolescent psychologist, and the chair recognized that the chronically ill children and their family members needed support as they grappled with the effects of cancer, sickle cell anemia or ongoing blood transfusions. Although Jaglom wasn't consulting with patients directly, she

ROBERT ADAM MAYER

While Dr. Leona Jaglom enjoys helping physicians learn to be psychologically minded when caring for patients, she's also passionate about influencing the medical culture to value the clinical caregiver's well-being.

listened as physicians discussed difficult psychosocial cases during team meetings and she shared her perspective. She also began to lead workshops for residents on how to handle difficult patients, conflicts with parents, delivering bad news and more. As she became a familiar face on the unit, residents and attending physicians started seeking her out when they needed support. In one instance, Jaglom helped a resident whose toddler son had unexpectedly died during surgery.

Jaglom left the hospital in 2008 because the facility was closing, but within months, a former physician colleague transferred to NYP Brooklyn Methodist and pitched the idea of hiring her to work in a similar role with the pediatric residents there. The department chair welcomed the idea, and Jaglom started organizing weekly psychosocial rounds to give physicians an opportunity to discuss the social, emotional, behavioral and familial issues patients were facing. Initially, the meetings included Jaglom, two hematology-oncology attending physicians, a couple of residents and sometimes a medical student.

Over time, the team recognized that the information shared during the sessions was so valuable that they needed to expand the group beyond the hematology-oncology department. Now, physicians present cases from the pediatric and neonatal intensive care units, the neurology department, adolescent medicine and the diabetes clinic, and all of the 30 pediatric

residents are encouraged to attend.

"A lot of these important social issues are not covered during regular medical rounds," says Kavitha Vemuri, MD, a second-year resident. The psychosocial meetings have given her an opportunity to learn how to navigate situations like treating teenagers who put themselves at risk of complications by not adhering to their medical regimens and transgender patients who may be sensitive to the names and pronouns clinicians use to address them.

Other discussions have covered cases in which children with sickle cell anemia were admitted due to complications from the disease but their parents were disengaged from their care. "Dr. Jaglom taught me how the family situation affects a child's ability to manage his or her disease, and how to modify the treatment plan based on this bigger picture," says Favre, who now works in primary care at East End Pediatrics in East Hampton, New York. Children who lack supportive parents, for example, may need additional time in the hospital to finish their full course of treatment rather than being sent home with medication, she says.

EXPANDING THE PSYCHOLOGIST'S FOOTPRINT

As more physicians started hearing Jaglom's insights, she was invited to join other groups. The endocrinologist in charge of the hospital's diabetes clinic asked her to start meeting with the clinical team to help them with patients who were struggling with the psychological aspects of the disease. She began talking to patients who were having difficulty adjusting to the required dietary changes or grappling with resentment about their newly diagnosed illness or identity as a chronically ill person.

Jaglom also collaborated with a physician on a new curriculum that allows residents to discuss topics that are not regularly covered during residency, such as dealing with medical errors, stress, burnout, difficult colleagues and complicated ethical dilemmas. Under the yearlong curriculum, known as Pediatric Opportunities for Development, attending physicians facilitate small group discussions among the pediatric trainees. The program is forging important connections among the residents, says Susan Gottlieb, MD, who started the program in 2010 along with Jaglom's help.

"I knew that residents were expected to undergo a tremendous transformation in a short period of time, which can be a scary experience," she says. "Yet they are socialized not to admit they are scared, and they can spend three years in a silo. The working groups allow the trainees to provide lateral support for one another."

In one discussion about racial and gender biases, Vemuri shared her own experiences with patients who requested a male doctor after she introduced herself. "I've learned to validate their medical concerns, explain the medicine involved in their situation and express that I am the doctor who is available," she says. "This usually facilitates more acceptance."

TAKING CARE OF PHYSICIANS

While Jaglom enjoys helping physicians learn to be psychologically minded when caring for patients, she's also passionate about influencing the medical culture to value the clinical caregiver's well-being. To spread this message, Jaglom leads an introductory lecture each year for 120 incoming residents from all the medical departments in the hospital about emotional intelligence, stress and sleep deprivation. They learn, for example, how to identify negative thoughts, use simple cognitive-behavioral therapy techniques and prioritize sleep.

As a member of the team who is not evaluating performances, Jaglom has also become a safe source of emotional support for both residents and attending physicians. "Interns often panic when they are struggling because they're afraid it will be impossible to finish the program if they need time off," she says. "There is a strong culture of stoicism, but I reassure them that they will get more support than expected if they talk to mentors or the department chair."

She is also a confidante for trainees and attending physicians who may be dealing with stress from an unexpected pregnancy, a divorce or children who are experiencing problems at home. "I don't provide therapy but instead listen and encourage

FURTHER READING

Healing Medicine's Future: Prioritizing Physician Trainee Mental Health
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Outcomes of MBSR or MBSR-Based Interventions in Health Care Providers: A Systematic Review With a Focus on Empathy and Emotional Competencies
Lamothe, M., et al. *Complementary Therapies in Medicine,* 2016

them to speak to the right people," she says.

Sometimes the channel to support starts with physicians who are concerned about a colleague. Doctors have sought her out when they noticed peers were in tears, not focused on work or incredibly tired. This kind of information is invaluable in light of the high risk of suicide among residents, Jaglom says. In certain cases, these tips have alerted her to situations involving trainees who were suffering from serious mental illnesses. She might suggest a leave of absence and safe supervision by family members and friends at home until the resident is stable again.

During her initial one-on-one meetings with residents, some reveal issues at the outset and ask for help. Several trainees have shared that that they have previously been diagnosed with attention-deficit hyperactivity disorder (ADHD) and asked Jaglom for ways to help manage the condition. She refers them to an ADHD coach and a psychiatrist to determine if medication is warranted. She also encourages them to be open with physician mentors about the situation.

Attending physicians have also appreciated her expertise during debriefing discussions when residents have questions that are difficult to answer. One trainee was distraught after an attending surgeon couldn't save a young boy who was struck by a car while chasing a ball. The resident was desperate to understand what more he could have done—and how he could become a physician if this was part of the job.

"The resident was beside himself," says Revathy Sundaram, MD, chief of the pediatric hematology-oncology department. "Dr. Jaglom validated the seemingly small things he did like bringing the parents coffee and inviting them to sit with the child. She explained that being there in the moment and taking time to listen to them were tremendous acts of caregiving."

Although it's difficult to measure the impact Jaglom is making on the hundreds of residents and attending physicians she has interacted with in the hospital, there are signs that they are translating her teaching into practice.

As a primary-care pediatrician with a high percentage of Medicaid patients, Favre says that addressing psychosocial issues has become a natural component of her care.

"I see patients who are dealing with family problems, immigration issues, chronic anxiety, depression and substance use, and I know how to address these concerns," she says. "Having a psychologist available specifically to teach residents about the psychosocial aspects of health is somewhat unusual, and I think I'm a better doctor as a result." ■

HOW TO MONITOR PATIENTS' MEDICATIONS

Helping to ensure patients follow their regimens and are aware of potential side effects is an increasingly important role for psychology practitioners

BY AMY NOVOTNEY

More than half of U.S. adults regularly take prescription medications, according to a 2017 survey by *Consumer Reports*. That same survey also found that the number of prescriptions for all Americans, including children, increased 85 percent from 1997 to 2016.

Many of these medications are psychotropics: Research suggests that over the course of a year, one in six American adults takes at least one psychiatric drug, including antidepressants, anti-anxiety medications and antipsychotics (*JAMA Internal Medicine*, Vol. 177, No. 2, 2017).

With so many people taking medications, and for a broad range of conditions, it's important for practicing psychologists to know what drugs patients may be taking, why they are taking them and whether they are experiencing any side effects.

"Patients today are often coming to psychologists on significant numbers of medications, including psychotropics, some of which may be helping, some of which may not," says Helen L. Coons, PhD, ABPP, a clinical health psychologist and assistant professor of psychiatry at the University of Colorado Denver School of Medicine.

Unfortunately, most psychology graduate training programs provide little in-depth education about psychopharmacology. So, how can a psychologist help patients manage their medications in ways that are helpful, clear and safe? Practitioners who regularly monitor medications advise that their colleagues:

1 PURSUE TRAINING While health psychologists, given their specialty, obviously must receive more education and training in how all medications affect patients, all psychologists should learn more about psychopharmacology because teasing apart potential medication problems and helping patients manage their regimens can significantly improve care, says clinical psychologist Virginia Waters, PhD, who has private practices in New Jersey and New York. "We are often the most stable medical caregiver for our clients and the one they speak with the most often," she says. "As a result, our patients look to us for guidance when things are not adequately explained to them."

APA's Div. 55 (American Society for the Advancement of Pharmacotherapy) provides information on APA-designated psychopharmacology training programs, including four two-year master's degree programs in psychopharmacology offered at Fairleigh Dickinson University in Teaneck, New Jersey, the California School of Professional Psychology at Alliant University, New Mexico State University and the University of Hawai'i at Hilo.

The number of prescriptions Americans take increased by 85 percent from 1997 to 2016.

In addition, the Neuroscience Education Institute and many state psychological associations offer continuing education on medication monitoring.

Coons also suggests that psychologists who want to learn more about medications should attend their hospital's medical rounds or get permission to shadow a colleague who has more experience in the area.

2 MAKE A LIST FOR EACH PATIENT At the beginning of every new intake session, Marlin Hoover, PhD, ABPP, of Hoover & Associates in Tinley Park, Illinois, asks clients to give him a list of their prescription and over-the-counter medications, along with dosage, time of day they're taken, and names and contact information of the client's health-care providers.

IAN MCDONNELL/GETTY IMAGES

Coons also asks her patients to bring in a list of medications, vitamins and herbs to the first consultation. She routinely requests verbal consent from the patient on the phone when scheduling the initial appointment because it allows her to collaborate with other providers to clarify the reasons for the referral and receive up-to-date information about the patient's medical and medication history. "Then we are providing interprofessional care from the start to improve the patient's well-being," she says.

3 RELY ON PROVEN TOOLS A helpful framework for communicating with other providers about a patient's medications is the Situation-Background-Assessment-Recommendation (SBAR) toolkit, says Bethesda, Maryland, clinical psychologist Neal Morris, EdD. Developed by the Institute for Healthcare Improvement, SBAR maps out the key points to cover when discussing a shared patient and can help psychologists stay on point and set expectations for what they'd like the physician to do to help the patient, he says, such as stopping a medication or setting up follow-up appointments. "It's mostly used between physicians and nurses, but the same parameters work very well for psychologists referring to and communicating with prescribers," Morris says.

He also recommends that practitioners buy a copy of "Stahl's Essential Psychopharmacology Prescriber's Guide" to help build their knowledge of

psychotropic drugs, their indications and potential side effects.

Morris and Hoover both also use the free Epocrates app to review safety information for medications. The app lists adult and pediatric dosing information, off-label indications, black box warnings, contraindications, adverse reactions and drug interactions.

4 DISCUSS EACH MEDICATION'S PURPOSE

Morris has found that most of his patients do not understand why they're taking a medication or how it's supposed to help them. So, once he has a list of what they're on, he counsels them about how they can tell if a medication is working and asks how they've been feeling since they started taking it.

During the initial visit, Coons asks all patients to complete standardized measures to assess symptoms and severity of mood, anxiety, fatigue, pain, posttraumatic stress disorder and sexual functioning and conducts a clinical interview to evaluate how a patient's medications may—or may not—be working.

"It's not uncommon for a patient to come see me for depression, anxiety or pain and to be on a significant amount of medications, but they might not be getting the appropriate dose at the appropriate time," she says. "Or they've been on the same medication forever and it might have worked at the beginning, but it's not working anymore."

For example, a patient's pain level or symptoms of depression may be high even when he or she is taking high doses of drugs for these conditions, she says. Coons typically urges patients to speak with their referring providers about their symptoms and to ask about other medication options. Then she discusses nonpharmacologic approaches to their pain, depression and anxiety.

5 TALK ABOUT SIDE EFFECTS

Some medications, such as those for high blood pressure or muscle pain, may reduce a patient's energy level, so they feel depressed or lose interest in things they usually enjoy, says Hoover. "Other prescription drugs can make them feel jittery or edgy and they come to you thinking they've developed an anxiety disorder when it's actually a side effect of a new medication," he says.

The psychologist can help patients attribute a symptom to a medication and then explore ways to counteract any negative side effects, he explains.

6 HELP WITH ADHERENCE

Psychologists are also key to helping patients understand what to expect when taking medications—guidance that is particularly salient when patients start taking new prescriptions. Shortly after starting on certain selective serotonin reuptake inhibitors (SSRIs), for example, many patients with anxiety or depression may initially feel even more edgy or anxious, Hoover says. That's a normal side effect and actually a sign that the medication is working. "The patient just needs to be reassured to give it a long enough time to begin working," he says.

Many psychologists also check in with patients to find out if they are taking their medications correctly. Once the client and psychologist have developed a trusting relationship, the patient is more likely to admit whether he or she has been skipping doses or failing to take a medication at all, says Mary Alvord, PhD, a private practitioner in Maryland who sees children and adolescents with anxiety, attention-deficit hyperactivity disorder (ADHD) and depression. In such cases, the psychologist can work with the patient to determine why he or she might be skipping doses and use behavioral strategies to improve adherence, she says.

Psychologists' input is also critical when patients go off their medications, Alvord adds. Abruptly stopping some pharmaceuticals, including SSRIs, can lead to flu-like symptoms, so psychologists should work with medical providers to determine

RXP IN THE UNITED STATES

IN WHICH STATES CAN PSYCHOLOGISTS PRESCRIBE?

So far, only five states have passed laws authorizing prescriptive authority for licensed psychologists: **Idaho, Illinois, Iowa, Louisiana** and **New Mexico,** along with the territory of **Guam.**

All prescribing psychologists are required to have completed a postdoctoral master of science degree in clinical psychopharmacology, finished a supervised practicum in clinical assessment and pathophysiology, and passed a national examination. After meeting these requirements, a prescribing psychologist will have a two-year provisional certificate to prescribe under the mandatory supervision of an MD.

how to support patients during transitions—for example, by slowly tapering off a medication. Psychologists can also encourage clients to speak with their prescribers if they've stopped adhering to their regimen due to adverse side effects.

7 GET OUTSIDE PERSPECTIVES Particularly when working with children and adolescents, psychologists should talk with teachers or school counselors for insight on how a medication may be affecting a patient during the school day, says Alvord. "When you're dealing with kids and teens, how they function in multiple settings is really critical information," she says. For example, a child who is taking a stimulant to treat ADHD may be symptom-free during the day, but later in the afternoon may be distracted when the medication has worn off. "In these cases, I might encourage a parent to speak with the prescriber about possibly adding a booster dosage to help the child get through that late-afternoon homework time."

8 CHECK IN REGULARLY As a board-certified geropsychologist in Dublin, Ohio, Mary Lewis, PhD, ABPP, visits a rehabilitation facility for older adults every Wednesday to review her patients' medical charts and talk to the nursing staff about any medical, cognitive or medication changes since her last visit. Then she meets with each patient to assess how they are doing physically, cognitively and emotionally, and she works with the other health-care providers to fine-tune individual treatment plans.

During a recent visit to the facility, one of her patients reported feeling depressed and told Lewis she wasn't sure if her antidepressant was still working. "That allowed me to ask, 'What did you feel that made you think it was helping and how are you feeling differently now?' Then we were able to tweak our psychotherapy a bit to address her concerns," Lewis says. ■

MENTORS FOR ALL

Students and early career psychologists from underrepresented backgrounds can face challenges in finding mentors. Universities and professional organizations are stepping up to address the need.

BY CHRIS PALMER

In the spring of 2013, Mei Chen was seeking advice on applying to graduate school. She wrote emails to a handful of professors asking for guidance but got no response. A few weeks later, she wrote to a few others. Again, no response. In reality, though, there was no Mei Chen: She was a persona, one of many with race-signaling names created by researchers who sent out such emails as part of a study on faculty's responses to emails seeking mentorship. The study found that faculty primarily responded to such requests from students with non-minority-sounding names (*Journal of Applied Psychology,* Vol. 100, No. 6, 2015). Mei Chen, and the research behind her, shed light on a real problem in academia.

"While it's possible these students with names that signaled racial minority status were not intentionally ignored, minority students are certainly not getting the same encouragement or opportunities," says Jennifer Teramoto Pedrotti, PhD, associate dean for diversity and curriculum in the College of Liberal Arts at California Polytechnic State University (Cal Poly).

Now, in an effort to make the field of psychology more inclusive to *all* individuals, universities and professional societies are identifying the challenges that underrepresented trainees face in finding mentors and offering programs to connect them with experienced faculty.

STRETCHED THIN

Being ignored by faculty is just one of the many ways that psychologists and psychology students from historically disenfranchised backgrounds are denied equitable mentorship. Other common experiences include unequal access to research and training opportunities, fewer chances to connect with professors and a lack of mentors who understand their diverse life experiences.

Many of these challenges are brought on by the lack of diversity among a department's faculty. "As a student, if you're not seeing anyone who looks like you at your institution, it might be a little intimidating to reach out and initiate contact," Pedrotti says.

Such hesitation not only translates to a failure to connect with potential mentors but could mean missed chances to engage in career-advancing activities outside the classroom. "If I have a research project coming up, I'm more likely to offer the opportunity to someone who's been coming to office hours or engaging with me in other ways," Pedrotti says. "So, having access and regular contact with professors is important."

In addition to seeking career advice, underrepresented individuals often look for mentors who understand the cultural component of their work, says Edward Delgado-Romero, PhD, a professor of counseling psychology at the University of Georgia. They also seek mentors who have been through some of the same hardships they have faced. "Young people find it refreshing to talk to someone who they don't have to convince that their experiences are real," he says.

Unfortunately, even for trainees lucky enough to have faculty from diverse communities in their department, chances are those professors already have a full mentoring load. "If you're the only faculty of color, for example, in a training program that is trying to increase the number of students of color, you're probably going to be stretched fairly thin," says Karen Suyemoto, PhD, co-founder of the Asian American Psychological Association's (AAPA) Leadership Fellows Program.

SHARING STRUGGLES

When a university department lacks diversity, faculty members' cultural competence is key to mentoring students from underrepresented groups, says Pedrotti. "You don't always need a perfect match," she says. "For example, someone who's Asian-American

OUR MENTORING SERIES

This article is the third in a series of articles on mentoring. The January *Monitor* offers insights on best practices in mentoring. February focuses on innovative programs. April will feature ethical issues in mentoring.

VANCE JACOBS

Desa Karye Daniel (left) and Dr. Barbara Thelamour (right) struck up a conversation at a 2015 Div. 45 meeting and discovered a shared sense of humor that laid the foundation for a strong mentor-mentee relationship.

doesn't need to mentor only Asian-American students." Being open and listening to all kinds of students as they share their experiences can provide a needed sense of validation, she adds.

Delgado-Romero says if trainees can't find a mentor in their home department, they should branch out by looking for a match in an adjacent department, a nearby hospital, a state association or an ethnic-minority psychological association such as the National Latinx Psychological Association (NLPA) or the Association of Black Psychologists. Approaching people at conferences is also a viable way to find mentorship. "When I was starting out, I drove a couple of hours just to attend a workshop given by [noted multicultural counseling psychologist] Patricia Arredondo, just hoping to get some of her wisdom," recalls Delgado-Romero, who went on to found the NLPA with Arredondo. "She ended up inviting me to lunch and she became my mentor, but I had to take the step of really reaching out and trying to connect."

As someone who now mentors students around the country, Delgado-Romero seeks mentees who are fairly independent but may need some support in specific areas. "If someone is just wanting to share struggles, that's OK too, but at some point, we have to get to work and do something," he says.

Meanwhile, all faculty can help by becoming more savvy about diversity through the trainings on implicit bias, microaggressions and related topics that many university departments are beginning to offer.

FINDING COMMUNITY

While faculty demographics are striving to catch up with those of the wider society, several programs are making it easier for trainees from underrepresented communities to get the mentorship they need. They include:

■ **Society of Indian Psychologists Native-to-Native Mentoring Program.** With just over 300 psychologists in the United States identifying as American Indian/Alaska Native/Native

Hawaiian, the chances of a Native trainee finding a Native mentor are slim. As a result, most Native students settle for mentors with whom they may not be able to connect due to cultural differences.

To help Native students get the mentorship they need, the Society of Indian Psychologists (SIP) runs the Native-to-Native Mentoring Program, which provides "communal counsel," modeled in a way that is culturally congruent for Native students. Each year, Native students also have an opportunity to take part in a gathering held in conjunction with SIP's annual conference.

"The leaders of the mentoring group help establish not just professional networking but also cultural and community networking, with support from the larger Native group," says psychologist Wendy Peters, PhD, an associate faculty member at Antioch University in Yellow Springs, Ohio. "We also keep in touch through virtual meetings and a second in-person gathering each year. As our program has evolved, our mentees have eventually become mentors, and we continue to grow more each year."

This kind of communal support for Native students has made an enormous difference for their careers. "Top scholars in their classes have told me, 'Were it not for your program, I would have dropped out and walked away,'" Peters says. "It would be a shame to lose brilliant young people from the profession, but this is frankly where we're at."

Faculty can help fill the need by becoming more savvy about diversity through training on implicit bias and related topics.

■ **AAPA Early Career and Graduate Student Leadership Fellows Programs.** Suyemoto, a former AAPA president, helped the association launch its Leadership Fellows Program 10 years ago when it noticed that early career Asian-American psychologists seemed reluctant to step into major leadership roles.

In the two-year program, two fellows are matched with a mentor who they meet with once a month in person or by phone. The focus is on leadership development, but discussions often touch on professional and personal goals. Common topics also encompass successfully negotiating cultural and racial discrimination and internalized racism. In the second year, mentees take on a project that is aimed at expanding on their professional interests as well as advancing AAPA's mission.

"Many of the mentors are alums of the program," says Nellie Tran, PhD, an assistant professor of community and multicultural counseling psychology at San Diego State University, who has co-directed the early career fellows program for several years. "So, they understand that we're looking for someone who will work with our fellows in a holistic manner." In 2017, Tran developed and launched the AAPA Graduate Student Leadership Institute, a three-day intensive program addressing the mentoring and professional community needs of Asian-American students. "We wanted to bring together folks who were sprinkled around the country, provide them with a strong foundation, network and a support system to help them through their programs," Tran says.

■ **The APAGS Committee on Sexual Orientation and Gender Diversity LGBTQ+ Mentoring Program.** Trainees identifying as LGBTQ+ can have a particularly hard time finding mentors, says Mary Guerrant, PhD, chair of the APAGS Committee on Sexual Orientation and Gender Diversity and an assistant professor of psychology at the State University of New York, Cobleskill. One big challenge is visibility. "Unlike more visible identities, such as race, LGBTQ+ identities are often much less apparent," she says. "This makes it hard for LGBTQ+ individuals to find LGBTQ+-identified mentors without outing themselves, which can be a challenge in and of itself."

Particularly for transgender and gender-nonconforming individuals, there's a stigma associated with even asking for a mentor. Research also shows LGBTQ+ graduate students and early-career professionals feel a need to overcompensate, by showing they can do things on their own, when faced with perceived discrimination or marginalization (*The Career Development Quarterly,* Vol. 49, No. 4, 2001; *Professional Psychology: Research and Practice,* Vol. 40, No. 2, 2009).

As a result, many are hesitant

VANCE JACOBS

Dr. Nicholas Grant (left) and his mentee Lesther Papa (right) matched through the APAGS Committee on Sexual Orientation and Gender Diversity's LGBTQ+ graduate student mentoring program in 2018.

to ask for any kind of help. Also, while disclosing identity can be an issue of comfort, in some places it's also a safety issue.

The APAGS mentoring program started five years ago. Each year, the program pairs about 50 early psychology graduate students with more advanced graduate students or professionals. Typically, matches are based on specific needs. Some want to be matched with a mentor with a similar professional background. Others want mentors who can help them decide how to come out in their graduate program or the world at large. Other trainees may want to do research with LGBTQ+ individuals and seek mentors with expertise in this area.

■ **APA Office on Disability Issues in Psychology Disability Mentoring Program.** Individuals with disabilities are sorely underrepresented in graduate psychology programs and careers. Few enter the field, and those who do often experience frustration that can lead to higher-than-average dropout rates. APA's Office on Disability Issues in Psychology developed a mentoring program to counteract these trends.

The Disability Mentoring Program matches students from various disability identities with either a mentor who identifies as an individual with a disability or an ally who is closely engaged in disability issues, research, practice or education. Mentors help to empower their trainees by offering insights on career paths, recommending which areas to study and even helping trainees navigate family relationships in which loved ones may not fully support a student's career goals.

The program supports an average of 50 mentor-mentee pairs, and has a waitlist. Some mentors continue to work with students after they have graduated. "We ask that mentees take the lead as far as introducing themselves and develop at least three goals to achieve within the mentoring relationship," says Maggie Butler, PhD, director of the Office on Disability Issues in Psychology. "We also ask that mentors develop goals, because we believe that mentorship should be beneficial for the mentor as well."

■ **Cal Poly College of Liberal Arts Underrepresented Students Network.** Despite its efforts to attract more students and faculty of diverse backgrounds, Cal Poly is still a predominantly white institution. That prompted the College of Liberal Arts Student Diversity Committee to set up the Cal Poly College of Liberal Arts Underrepresented Students Network, a peer-mentoring program that helps students find community, learn about career resources and get advice from peers. Students on the committee offer training on a variety of topics—including active listening and understanding the power of assumptions—to peer mentors, each of whom works with two to four mentees.

Cal Poly also hosts the BEACoN Mentor Network, an effort to bring undergraduate research opportunities and mentoring to students from historically disenfranchised backgrounds. The network offers professional development opportunities for students and faculty, including workshops on such topics as conceptualizing personal strengths, authentic storytelling and implicit-bias training. "It makes students feel more comfortable interacting with academics," says Pedrotti, who oversees the Underrepresented Students Network and co-created BEACoN. "Then, on top, some students are able to form strong connections that lead to more formal mentoring." ■

“My goal is to create a space to allow everyone at Facebook to think bigger,” says Dr. Artie Konrad.

JOGGING HAPPY MEMORIES

At Facebook, researcher Artie Konrad helps bring the user's voice into the company's "Memories" feature

BY SHAUNA REID

Each day, more than 90 million people visit Facebook's "Memories" page, a product the company developed to remind people about their past family vacations, gatherings with friends, major life milestones, and the full range of moments shared on Facebook.

Leading this effort is psychologist and user-experience researcher Artie Konrad, PhD, who specializes in technology-mediated reflection, or using technology to support reminiscence, something Facebook has found that people want more of in their digital lives.

"Our goal is to create a delightful experience," says Konrad. "It's a little bit of joy in your day to see a memory of a friend that you hung out with years ago. From my research before I joined Facebook, we know that reminiscence increases mood and well-being. When we do research at Facebook, we're finding out what our users hope to get from the experience and figuring out how we can help them revisit the past in exciting ways."

What does your role entail?

I am a bridge between the people who are using our products and the people who are developing them. My goal is to create a space to allow everyone at Facebook to think bigger, to step outside their roles and consider the people they're designing for. I say to our team, "These are the things that you are trying to work out, so how does that translate into clear research questions?" Then I conduct multi-method research to find out how users are thinking and feeling about our products. I encourage all team members to observe the research so they're part of the process.

Another important element of my job is communicating those findings in a way that's digestible to my colleagues who may not have a research background.

How did you become interested in this area?

In 2011, I started graduate school in cognitive psychology at the University of California, Santa Cruz. My adviser, Steve Whittaker, was interested in technology and memory, while I was interested in well-being. At first, I wondered how could these areas ever come together? Steve assured me that we would find a satisfying overlap between our interests.

As it turned out, the deeper I went into the research literature, the more I realized how interwoven these fields are. For example, technology provides new opportunities to help us remember our pasts, which can have a positive impact on our well-being. So, I focused my PhD research on reminiscence and technology. Steve and I coined a term for this: technology-mediated reflection, or TMR.

Our work included developing and researching TMR smartphone apps like MoodAdaptor and Echo. Echo, for instance, enabled people to record everyday experiences, by journaling and taking photographs, and rate how they felt about those experiences, and it prompted people to reflect on them at a later time. Our research showed that reminiscing with technology can reconnect people with positive emotions and increase long-term well-being. TMR apps were the tools we used to understand these psychological processes.

How did you come to work at Facebook?

While working on my PhD, I applied for a summer internship at Facebook in 2014. I worked on the Messenger app, exploring how people express themselves with stickers and emoji.

At the time, Facebook had recently developed its first video memory products, "Lookback" and "Say Thanks," which told stories by combining photo with video memories, music and simple designs. I offered to do research for that team on the side and ended up developing a quick study of what kinds of memories people enjoyed revisiting.

I returned in 2015 for a second internship, working on the "On This Day" product to better define our role in reminiscence. "On This Day" is now part of "Memories," a single place on Facebook to reflect on the moments you've shared with family and friends, including posts and photos, friends you've made, and major life events. Facebook offered me my current job and I started in 2016 after I earned my PhD.

CAROLYN LAGATTUTA

What was it like moving from academia to Facebook?

It was super exciting. I completed more stages of research that summer than I could ever hope to complete in a year in academia. It was particularly gratifying to apply my academic research background to help set the road map for the development of "Memories" on Facebook and provide that research context.

How has your research shaped Memories on Facebook?

From past research, we knew our users wanted a way to easily revisit these memories from their timelines. But when "On This Day" launched in 2015, we didn't yet know what people wanted from the experience. What types of memories did they want to see? How often? I've since conducted 15 studies to help answer these questions. We've discovered there are certain types of posts most people prefer not to see again as memories, such as accidents or failed ventures. We've invested heavily in ways to identify such memories and filter them out. We've also found people wanted more control over what they see because these memories are personal and complex. So, we developed preferences that allow you to filter out dates and people, and later added some features to make those filters more accessible.

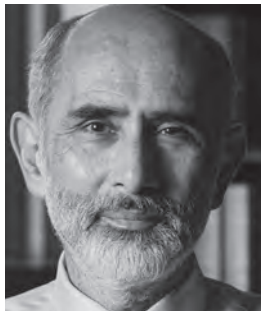
New product ideas have been directly and organically inspired by hearing people talk about what they wanted from their "On This Day" experience. One thing we frequently hear is that people want to see more recent memories. That's why we developed a new memories experience that generates monthly and seasonal photo recaps of recent events, like your summer or the holiday season.

You've described part of your role as being a sensible steward of memories. What makes a sensible steward?

When we're designing for millions of people, we don't want to treat memories as data. We want to treat them as personal memories and not lose sight of the individual. One way I help the team is by having conversations about what memory is. We draw on research and even pop culture to identify our own relationships with memory and its complexities. That develops a tremendous empathy for the people using our products, so we're hopefully infusing humanity and thoughtfulness into every aspect of creating them. It's a process of understanding and a North Star we're working toward. ■


Mangelsdorf


Hupp


Muñoz


Shilling


Hinshaw

PSYCHOLOGISTS IN THE NEWS

The University of Rochester has named **Sarah Mangelsdorf, PhD,** as its incoming president. She currently serves as the provost and chief operating officer at the University of Wisconsin–Madison. Prior to that, she was the dean of the Weinberg College of Arts and Sciences at Northwestern University and of the College of Liberal Arts and Sciences at the University of Illinois at Urbana-Champaign.

Southern Illinois University Edwardsville has presented its Champion for Diversity Award to psychology professor **Stephen Hupp, PhD,** for his commitment to diversity and inclusion as the social-emotional consultant to St. Clair County's Head Start/Early Head Start programs. Hupp and his graduate students implement social-emotional programming for Head Start that aims to increase opportunities for children in lower-income communities.

The Association for Behavioral and Cognitive Therapies has presented its Outstanding Mentor Award to **Ricardo F. Muñoz, PhD,** a distinguished professor of clinical psychology at Palo Alto University in California, for his "exceptional dedication to providing direction to a diverse group of mentees, caring about both career success and overall well-being." Muñoz is also recognized for including his mentees in his research on the prevention and treatment of depression, smoking cessation and Latino health.

APA has appointed **Russell D. Shilling, PhD,** as its first chief scientific officer, responsible for leading the association's science agenda and advocating for the application of psychological science in government, industry and other settings. Shilling spent much of his career working as an aerospace experimental psychologist for the U.S. Navy until 2014, when he retired as a captain. Most recently he was a senior innovation fellow for education research and development with the nonprofit organization Digital Promise Global. Prior to that, he spent three years as executive director of the Office of STEM in the U.S. Department of Education and four years as a program manager at the federal Defense Advanced Research Projects Agency. Shilling also spent six years as a program manager for the Sesame Street/Electric Company's military child resilience programs.

University of California, Berkeley psychology professor **Stephen Hinshaw, PhD,** has won the 2018 American Book Fest "Best Book" Award for autobiography/memoir. His memoir, "Another Kind of Madness: A Journey Through the Stigma and Hope of Mental Illness," details the impact his father's misdiagnosed bipolar disorder—and the enforced silence surrounding it—had on his family, and underscores the importance of destigmatizing mental illness.

Fourteen psychologists have been elected fellows of the American Association for the Advancement of Science by the association's section on psychology. Fellows are recognized for their extraordinary achievements in advancing science. The new fellows are: **Jennifer Crocker, PhD,** The Ohio State University; **Eric Eich, PhD,** University of British Columbia; **Russell H. Fazio, PhD,** The Ohio State University; **William E. Haley, PhD,** University of South Florida; **Steven C. Hayes, PhD,** University of Nevada, Reno; **Daphne McDonell Maurer, PhD,** McMaster University; **Brian A. Nosek, PhD,** University of Virginia's Center for Open Science; **Robert M. Nosofsky, PhD,** Indiana University; **K. Daniel O'Leary, PhD,** Stony Brook University; **Ellen Peters, PhD,** The Ohio State University; **Toru Shimizu, PhD,** University of South Florida; **Peter M. Todd, PhD,** Indiana University; **Elaine F. Walker, PhD,** Emory University; and **Elke U. Weber, PhD,** Princeton University. ■

Photographer: Dan Moore – UW-Green Bay

Strengthening Education in Psychological Science

APA has launched the first major national initiative designed to improve the Introductory Psychology course. Led by Regan A. R. Gurung, past recipient of the Charles L. Brewer Distinguished Teaching of Psychology award, and Garth Neufeld, Citizen Psychologist awardee, experts from around the nation will provide recommendations on how the course is taught, how teachers can be trained, and how student learning can be assessed. The Intro Psych course reaches well over 1 million students per year.

The APA Introductory Psychology Initiative will also provide students with ways to achieve learning objectives that fuel personal development and success, creating a more effective and psychologically literate workforce in the process.

To learn more, visit pages.apa.org/education

Enhancing Teaching and Learning. Promoting Psychological Science. This is APA.

AMERICAN PSYCHOLOGICAL ASSOCIATION

BY LEA WINERMAN

HONESTY AT THE DOCTOR'S OFFICE

Most people have withheld important information from their health-care providers, a study finds

81.1%

The percentage of people who have **withheld** medically relevant **information** from their health-care providers, according to an online survey of 2,013 U.S. adults (average age 36). A separate survey of 2,685 older adults (average age 61) found that **61.4 percent** reported withholding information from their providers.

45.7%

The percentage of adults who avoided telling their providers that they **disagreed** with their care recommendations—the most common type of information patients withheld. Among older adults, **31.4 percent** reported avoiding telling their providers this. Other common types of information that patients withheld included **not understanding instructions,** having an **unhealthy diet**, **not taking medication** as instructed and **not exercising.**

81.8%

The percentage of adults who withheld information because they didn't want to be **lectured or judged.** Among older adults, **64.1 percent** withheld information for these reasons. Other common reasons included feeling **embarrassed,** not wanting to be **thought of as difficult,** not wanting to **take too much time** and **not thinking it mattered.**

Source: Gurmankin Levy, A., et al. (2018). Prevalence of and Factors Associated With Patient Nondisclosure of Medically Relevant Information to Clinicians. *JAMA Network Open,* 1(7). Available at https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2716996.

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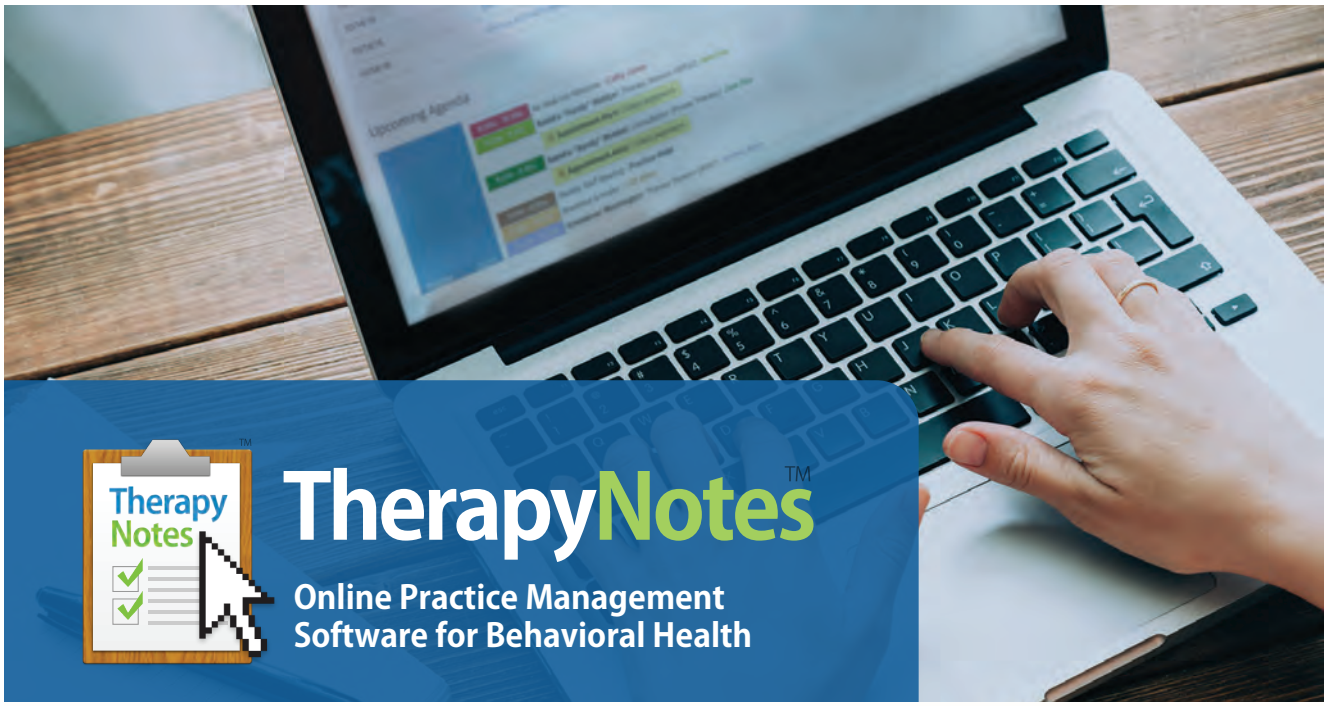

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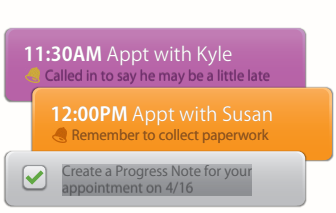

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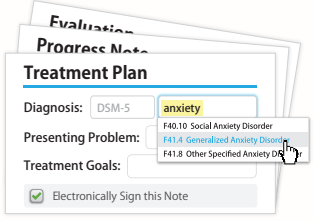

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