WOMEN'S HEALTH *In Focus* AT NIH

A QUARTERLY PUBLICATION OF THE NIH OFFICE OF RESEARCH ON WOMEN'S HEALTH

National Institutes of Health • Office of the Director | Volume 6, Issue 1, 2023

Disparities and Workforce Diversity in Mental Health

National Institutes of Health
Office of Research on Women's Health

IN THIS ISSUE

3 NIH Addresses Disparities and Workforce Diversity in Mental Health
8 Sex Differences in Substance Use Disorders and Their Treatment
10 The Pandemic's Effects on Women's and Nurses' Mental Health

Visit the subscription page to sign up to receive future issues of ***Women's Health in Focus at NIH***.

TABLE OF CONTENTS

2 DIRECTOR'S CORNER

3 FEATURE STORY

- **Federal Organizations Address Disparities and Workforce Diversity in Mental Health**

8 NATIONAL INSTITUTE ON DRUG ABUSE

- **NIH Promotes Greater Understanding of Sex Differences in Substance Use Disorders and Their Treatment**

9 IN THE JOURNALS

- **Pandemic-Related Socioeconomic Risks Increase Likelihood of Mental Health Problems in Women**
- **Integrating Prenatal and Mental Health Care for Black Women May Mitigate Health Disparities**

10 WOMEN IN SCIENCE

- **Featured Research and Perspectives**
  - **Nursing Panel Examines Pandemic's Effects on Women's and Nurses' Mental Health, Makes Policy Recommendations**
- **Scientist Spotlight – Margaret S. Stockdale, Ph.D.**
- **Institutional Spotlight**
  - **Rochester Institute of Technology Models Effective Practices for Equity**
- **In Case You Missed It**

13 NOTEWORTHY

14 STAFF UPDATES

14 UPCOMING EVENT

Director's Corner

Janine Austin Clayton, M.D., FARVO
Director, NIH Office of Research on Women's Health
NIH Associate Director for Research on Women's Health

The NIH COVID-19 website lists several troubling mental health trends related to the pandemic. Rates of anxiety, depression, and substance use disorders have increased since the early months of 2020. Almost half of the participants in a 2021 survey study reported having had recent symptoms of an anxiety or depressive disorder, and 10% of respondents felt that their mental health needs were unmet. Those with mental illnesses or disorders who contract COVID-19 are more likely to die than those without. Sex and gender differences exist in the risks, incidence, symptoms, and other factors associated with mental disorders.

Thus, this issue of In Focus *features multiple articles on mental health issues pertaining to public health, workforce diversity, psychiatric and behavioral research, health equity, and ORWH's mission areas. Our cover story discusses mental health disparities, the lack of diversity in the mental health workforce, and Federal initiatives addressing these issues. Rita Valentino, Ph.D., Director of the Division of Neuroscience and Behavior at the National Institute on Drug Abuse (NIDA), discusses sex differences in the onset and progression of substance use disorders and in the treatment of these disorders. We also examine how socioeconomic and pandemic-related stressors increase women's likelihood of developing mental illness, as well as the benefits of integrating prenatal and mental health care for Black pregnant women.*

Other articles in this issue discuss efforts to address sexual harassment in the workplace, particularly within the biomedical research community; recent retirements and changes in leadership throughout NIH; and additional topics related to ORWH's work.

Please share this issue of In Focus *with your colleagues and subscribe by clicking the link on the front or back cover.*

Janine Austin Clayton, M.D., FARVO

Director, NIH Office of Research on Women's Health

NIH Associate Director for Research on Women's Health

Federal Organizations Address Disparities and Workforce Diversity in Mental Health

The Executive Office of the President of the United States; the U.S. Department of Health and Human Services (HHS), including NIH and the Substance Abuse and Mental Health Services Administration (SAMHSA); and other Federal organizations have prioritized mitigating mental health disparities for minoritized populations and promoting diversity within the mental health workforce.

"Disparities in mental health play outsized roles in our society," observed Joshua A. Gordon, M.D., Ph.D., Director of the National Institute of Mental Health (NIMH), in a 2018 blog post. "People from racial and ethnic minority populations, as well as those from lower socioeconomic strata, and those who live in rural communities, are less likely to have access to mental health care and more likely to receive lower quality care." Other factors—such as sexual orientation, gender identity, age, disability status, educational attainment, language fluency, immigration status, and cultural affiliations—can impose barriers to seeking, accessing, and engaging in care; result in poorer outcomes; and create or exacerbate mental health disparities.

The lack of diversity within the mental health workforce also contributes to these health disparities. National data from 2013 and 2015 compiled by the U.S. Census Bureau, American Psychological Association (APA), and National Science Foundation (NSF) show that 88% of the health service psychology workforce, 86% of psychologists, and 81% of the mental health academic workforce were White.[1] As the U.S. population was 62% non-Hispanic White in 2015, members of minoritized racial and ethnic populations are dramatically underrepresented in the mental health workforce.[1] Although recent trends show decreasing underrepresentation (e.g., in 2015, 34% of early-career psychologists were from underrepresented minority [URM] populations[2]), workforce inequities will likely persist for years, if not decades. Underrepresentation in the mental health workforce raises equity concerns, may serve as a deterrent for many seeking psychiatric services, and limits the available perspectives, experiences, and language skills contributing to clinical care, psychiatric research, and behavioral intervention development.

In this article, we will discuss the mental health disparities prevalent in the United States, the lack of diversity in the mental health care workforce, and some ongoing and future Federal initiatives to address these problems.

Mental Health Disparities

Many who are living with mental illnesses do not receive treatment. The 2020 National Survey on Drug Use and Health (NSDUH) reported that 53.8% of adults with "any mental illness" and 45.5% of adults with "serious mental illness" had not received mental health services within the previous year. The reasons that many who need treatment fail to receive it are myriad and can involve racial, ethnic, gender, cultural, socioeconomic, systemic, geographic, and other determinants of health. The resulting health disparities disadvantage those with lower income, those from URM populations, and other demographic groups. Studies also suggest that the COVID-19 pandemic, especially associated financial hardships and increased burdens on the health care system, may have exacerbated these disparities.[3] Below, we highlight some salient and often-interrelated areas in which mental health disparities manifest as well as some associated causes and consequences.

STAFF

NIH Office of Research on Women's Health

Janine Austin Clayton, M.D., FARVO
Director, ORWH; Associate Director for Research on Women's Health, NIH

Chyren Hunter, Ph.D.
Associate Director for Basic and Translational Research, ORWH

Samia Noursi, Ph.D.
Associate Director for Science Policy, Planning, and Analysis, ORWH; Senior Editor

Sarah Temkin, M.D.
Associate Director for Clinical Research, ORWH

Xenia Tigno, Ph.D.
Associate Director for Careers, ORWH; Women in Science Section Editor

Editorial Team

Jasmin Bush, M.A.
Editor-in-Chief

Eric Sarlin, M.A., M.Ed.[1]
Managing Editor, Senior Writer

David Yontz[1]
Copy Editor

Caroline Collins, M.S.[2]
Contributor

Maggie Bray[1]
Virginia Robles-Villalba[1]
Graphic Artists

1. Synergy Enterprises, Inc.
2. Booz Allen Hamilton, Inc.

Nima Sheth, M.D., SAMHSA

Crystal L. Barksdale, Ph.D., M.P.H., NIMHD

Christina P.C. Borba, Ph.D., M.P.H., NIMH

Socioeconomic Mental Health Disparities. "Cost is a leading barrier to access and treatment," says Nima Sheth, M.D., Senior Medical Advisor at SAMHSA's Center for Mental Health Services. Data from the 2016 NSDUH show that inability to afford the cost of care was the most commonly reported reason for not receiving services among adults who perceived the need for care for mental illness, including serious mental illness. The data also indicate that the high cost of mental health care reduces treatment efficacy and leads to poorer patient outcomes.[4] Dr. Sheth explains that even those with medical insurance may have difficulty navigating insurance policies, determining the extent of their benefits, locating providers who accept insurance, and affording high co-pays and out-of-pocket costs. She adds that many insured patients may hesitate to seek care "knowing that mental health treatment is not a one-time visit and that co-pays and visit costs will continue for some time."

"The high cost of mental health care constitutes a health care system factor that exacerbates existing disparities in access to care and treatment outcomes," says Crystal L. Barksdale, Ph.D., M.P.H., a Program Director in the Division of Community Health and Population Science at the National Institute on Minority Health and Health Disparities (NIMHD). "Cost is a noted barrier to treatment seeking and treatment engagement for many populations that experience health disparities, such as racial and ethnic minoritized populations and individuals from lower socioeconomic groups."

Low socioeconomic status itself constitutes a risk factor for mental illness. Research shows that children and adolescents from socioeconomically disadvantaged households are two to three times more likely to develop mental health problems,[5] and both children and adults from poor or low-income households have an increased risk of mental health problems that may persist across the lifespan.[6]

Racial and Ethnic Mental Health Disparities. The *HHS Roadmap for Behavioral Health Integration* states that people from most underserved racial and ethnic groups are less likely than non-Hispanic White people to have health insurance coverage and to receive behavioral health care. Numerous social determinants of health and other factors can prevent minoritized populations from seeking and receiving psychiatric services, including socioeconomic disadvantages and structural inequities such as those associated with housing, the legal system, and local governance.[7]

Studies have shown measurable effects of race on mental health treatment. Children and adolescents from minoritized populations experience inequities in accessing mental health care and have less favorable outcomes with mental and behavioral health conditions.[8] For instance, evidence suggests that children from URM groups with attention-deficit/hyperactivity disorder are less likely to receive treatment.[9]

"Health disparities can also have deadly consequences," says Christina P.C. Borba, Ph.D., M.P.H., Director of the Office for Disparities Research and Workforce Diversity (ODWD) at NIMH. "For example, disparities in mental health services may contribute to increased suicide risk among Black youth." Data indicate that the suicide rate among Black children ages 5–11 nearly doubles that of same-aged White children. Data also suggest that suicide rates have increased among Black adolescents, particularly among Black girls ages 12–17.[8] Dr. Borba explains that compared with White children and adolescents, Black youth are less likely to receive, engage in, or complete mental health treatment for depression, often because of negative experiences and perceptions of the health care system, and less likely to receive outpatient treatment for mental illnesses, even after a suicide attempt.[10]

These mental health disparities continue well beyond childhood and adolescence, and studies have shown disparities associated with race and ethnicity in numerous areas of mental health and treatment services. For instance, research has identified disproportionate mental health burdens associated with race and ethnicity throughout the COVID-19 pandemic.[7,11] Another study found disparities in psychiatric decisional capacity consultations, which reflect clinicians' assessments of patients' ability to make treatment decisions for themselves.[12] Additional research has identified reduced access to substance use treatment within the Medicaid managed care system[13] and many other mental health disparities associated with race and ethnicity.

Culture and Mental Health. Cultural values and practices, religious beliefs, and other ideological factors can affect how and when individuals seek psychiatric services. "Cultural background may strongly influence preferences for treatment and care, such as from

whom care is received, where care is received, and how it is delivered," says Dr. Barksdale. "A patient's cultural background and beliefs may dictate whether care is sought; what issues, symptoms, or problems necessitate attention from an outside source; and the type of individual consulted—a friend, religious leader, lay health provider, mental health practitioner, or other health care provider." Dr. Sheth states, "Some individuals may come from backgrounds and cultures that mistrust Western medicine due to past traumas with the system, such as experimentation and unethical research practices."

Although those cultural factors that influence mental health may be associated with race, ethnicity, religion, or nation of origin, other cultural and subcultural affiliations can also affect treatment seeking, engagement, and outcomes. For instance, combat veterans have higher incidences of post-traumatic stress disorder, major depression, substance use disorders, traumatic brain injury, and other mental health problems than the general U.S. population. However, several aspects of military culture deter many veterans from accessing treatment, including a perception that seeking help denotes weakness, fear of adverse consequences, and systemic issues.[14]

Stigma associated with mental illness and psychiatric care represents a bias that crosses many cultures and represents a major barrier to treatment. Interventions and educational programs addressing stigma may help to overcome this obstacle.

Disparities and the Intersection of Race/Ethnicity and Sex/Gender. Studies have also shown associations between other U.S. demographic groups and mental health disparities, a decreased likelihood of seeking out and engaging psychiatric services, and poorer patient satisfaction and outcomes. Geographic location, sexual orientation, gender identity, educational attainment, language fluency, disability status, age, immigration status, and past discrimination experiences can also contribute to mental health disparities.[15–18]

Race and ethnicity intersect with sex and gender to influence social identity and can affect mental health issues and needs. Studies have shown that multiply marginalized populations tend to have the highest incidence of mental distress.[27] For instance, analysis of data from the National Longitudinal Study of Adolescent to Adult Health showed that Black and Asian American women experience the highest mental health distress and identified other mental health disparities within racial, ethnic, and gender groups.[28] Another study found that the intersection of race, sex, sexual orientation, and discrimination correlated with substance use patterns and depressive symptoms.[29] Compared with White heterosexual women, White sexual minority women reported greater depressive symptoms as well as alcohol, tobacco, and marijuana use, and Black sexual minority women reported more tobacco and marijuana use.[29] An analysis of the medical literature suggests room for improvement in psychiatric data collection on determinants of health like race, ethnicity, sex, and gender, with few studies differentiating between gender and sex and most studies defining social determinants as only binary variables.[30]

Mental Health Care Workforce Diversity Challenges

Women and individuals from many minoritized racial and ethnic populations remain underrepresented in the mental health workforce, although data and statistical projections indicate that this gap is decreasing and will continue to decrease.[1,2,18,19] Several Federal agencies have developed strategies to address this problem, both to promote workplace equity and to help mitigate health disparities by removing a major barrier to seeking treatment, that is, hesitancy among health disparity populations to receive treatment from providers from different demographic groups.

In addition, according to Dr. Borba, "equitable representation in the mental health workforce can inform practice and policy to reduce or eliminate disparities."

Underrepresentation of Women. Analyses of the mental health workforce from the 1980s to the 2010s reveal a historical lack of gender diversity in the field.[18–23] In relation to the demographics of the U.S. population, women have been significantly underrepresented in the psychiatry workforce as practicing physicians, residents, fellows, and academic faculty members.[19,20] A 2020 analysis of data on the psychiatric workforce from 1987 to 2016 showed that women were underrepresented among practicing psychiatric physicians.[19] Among psychiatry residents, women's representation decreased relatively by 2.6% from 2007 to 2018, but men's representation increased relatively by 15.5%.[18] Between 2007 and 2020, women's representation in the addiction psychiatry workforce decreased by almost 11%.[20] In more recent years, women's representation in U.S. medical schools has increased, and gender underrepresentation in the mental health workforce is diminishing.[18,19]

Underrepresentation of Racial and Ethnic Groups. Studies show similar trends of historical but diminishing underrepresentation of URMs in the mental health workforce.[19] The 2020 analysis of 1987–2016 data showed that those from underserved racial and ethnic groups were underrepresented in psychiatry as practicing physicians, faculty members, and residents.[19] Data from 2011 to 2019 show that representation of White consultation-liaison psychiatry fellows increased by 7.3%, whereas representation decreased for those in the same positions from Asian/Pacific Islander, African American/Black, and other URM backgrounds.[21] Among addiction psychiatry fellows, the period from 2011 to 2020 saw relative decreases in the representation of individuals from White and Asian/Pacific Islander populations, a relative increase

of individuals from Black populations, and no change among Hispanic, Native American, or Alaska Native populations.[20] In more recent years, the field has seen overall increased representation of URMs in psychiatric residencies, fellowships, and faculty positions. However, greater underrepresentation persists in some subspecialities, such as forensic psychiatry.[24]

Consequences of Low Workforce Diversity. The lack of diversity among mental health care providers deters many individuals from URMs from accessing care. "With a less diverse workforce, populations from various backgrounds may feel uncomfortable and even afraid of seeking treatment," says Dr. Sheth. "Increasing diversity in the workforce would afford racial and ethnic minority communities more of a choice in obtaining a provider that best fits their needs."

"The lack of diversity also limits the range of perspectives and experiences informing clinical care, the types of interventions employed, and the degree to which they are culturally and linguistically appropriate," says Dr. Barksdale. Such limitations can decrease patient satisfaction and progress, ultimately resulting in poorer outcomes.

Dr. Sheth adds, "Having treatment providers who understand one's cultural background and history benefits patient-provider rapport, which can build trust and improve engagement and outcomes." Patients from URM populations may prefer to see physicians with the same racial and ethnic background—known as patient-provider racial concordance.[25,26] Although not requisite for quality health care, concordance can improve patient-provider interactions as well as patient satisfaction and outcomes under some circumstances. For instance, one study found that URM patients seeing racially concordant physicians tended to have longer visits and complied more closely with preventive

recommendations.[25] Other research showed an association between racial concordance and improved patient-provider communication.[27]

Greater diversity in the field can also improve mental health research. "A more diverse biomedical research workforce encourages the kind of innovative thinking and distinct perspectives that lead to scientific progress," says Dr. Borba, echoing the vision outlined in the *NIH Blueprint for Neuroscience Research*. Dr. Sheth comments that research and development of new behavioral health interventions benefit from diverse perspectives: "The efficacy of mental health interventions varies by cultural, racial, and ethnic background. When the considerations and needs of a population are left out of a study design or trial, the results may not be relevant to that population."

Dr. Barksdale echoes this sentiment. "A lack of diversity among individuals conceptualizing, conducting, and implementing the research limits the range of perspectives involved in developing interventions, guiding research processes, interpreting data, and effectively disseminating and implementing findings," she says. Dr. Barksdale adds that limited representation on research teams "can deter individuals from diverse backgrounds from participating in mental health research studies and can hamper appropriate engagement with communities on mental health research endeavors." While NIH inclusion policies help to ensure scientifically appropriate racial and gender diversity among research populations, the multiple perspectives and experiences of diverse research teams can strengthen study designs and deepen interpretation of results.

Equitable practices throughout the grant application process, peer review of submissions to scientific publications, performance and promotion reviews, and similar professional assessments may also help to advance diversity in the mental health field. Several ongoing efforts examine the equity of NIMH's internal review processes. Dr. Borba notes that NIMH is working closely with the Center for Scientific Review (CSR) in its efforts to identify and eliminate bias and disparities in peer review and grant funding through policy revision, reviewer training, and procedural change in a manner consistent with the recommendations of the Advisory Committee to the Director Working Group on Diversity.

"By promoting diversity in research—among those who participate in clinical research and among those who conduct the research—we can pave the way toward more equitable and appropriate care for everyone," Dr. Borba says.

Current and Future Steps to Address Diversity and Equity in Mental Health

The Federal Government and other organizations have developed multiple initiatives to continue the trend of increased representation among the mental health workforce and decrease mental health disparities for all (see *Federal Efforts Toward Diversity and Equity in Mental Health Care and Research*). Representation among mental health care providers and researchers has improved in the past few years. However, according to Dr. Barksdale, "we need continued and increased investment in initiatives aimed at diversifying

the mental health workforce as well as research efforts that examine and develop treatment and prevention interventions that address social determinants of mental health and upstream factors that affect disparities." Advancing mental health equity for all groups and individuals in the United States remains a top Federal priority.

References

1. APA Center for Workforce Studies. How Diverse Is the Psychology Workforce? Accessed 19-Oct-2022.
2. NSF, National Center for Science and Engineering Statistics. 2015 National Survey of College Graduates Public Use Microdata File and Codebook. Accessed 12-Oct-2022.
3. Lee and Singh. 2021. *Health Equity* PMID: 34909547.
4. Park-Lee et al. 2017. *CBHSQ Data Review* PMID: 29431966.
5. Reiss. 2013. *Soc. Sci. Med.* PMID: 23746605.
6. Hodgkinson et al. 2017. *Pediatrics* PMID: 27965378.
7. NIMHD. Centering Structural Inequities in Conversations on Mental Health Among People of Color. Accessed 10-Oct-2022.
8. Hoffmann et al. 2022. *Pediatrics* PMID: 36106466.
9. Yang et al. 2022. *Psychiatr. Serv.* PMID: 35959536.
10. NIMH. Addressing the Crisis of Black Youth Suicide. Accessed 05-Oct-2022.
11. Nguyen et al. 2022. *PLoS One* PMID: 35947543.
12. Garrett et al. 2022. *Psychiatr. Serv.* PMID: 36004436.
13. Alegría et al. 2022. *Med. Care* PMID: 36038524.
14. RAND. Invisible Wounds: Mental Health and Cognitive Care Needs of America's Returning Veterans. Accessed 16-Oct-2022.
15. NIMHD. NIMHD Director Statement in Support of NIH Efforts to Address Structural Racism. Accessed 19-Oct-2022.
16. Sonik et al. 2020. *Soc. Sci. Med.* PMID: 32276182.
17. ASPE. Health Insurance Coverage Among Working-Age Adults with Disabilities: 2010-2018. Accessed 17-Oct-2022.
18. Chaudhary et al. 2022. *Psychiatr. Q.* PMID: 33586128.
19. Wyse et al. 2020. *Acad. Psychiatry* PMID: 32705570.
20. Saboor et al. 2022. *Psychiatr. Q.* PMID: 35083646.
21. Awan et al. 2022. *Psychiatr. Q.* PMID: 35195848.
22. Abrams et al. 2022. *Subst. Abus.* PMID: 35142262.

Federal Efforts Toward Diversity and Equity in Mental Health Care and Research

NIH, SAMHSA, and other Federal organizations have developed several programs and other initiatives to promote diversity and health equity in mental health care and research. We highlight a few of these efforts below.

The BRAIN Initiative®. NIH's Brain Research Through Advancing Innovative Neurotechnologies® (BRAIN) Initiative aims to revolutionize our understanding of the human brain. The BRAIN Initiative recognizes that diverse teams working together and capitalizing on innovative ideas and distinct perspectives outperform homogeneous teams. As such, applicants responding to many of the initiative's funding opportunity announcements must include a plan for enhancing diverse perspectives (PEDP). This requirement helps to create inclusive and robust research teams.

UNITE. NIH established UNITE to identify and address structural racism within the scientific community, including psychiatric research and clinical care. Among other efforts, UNITE has expanded the PEDP and supports the Science Education Partnership Award (SEPA) to enhance researcher diversity.

ComPASS. The Community Partnerships to Advance Science for Society (ComPASS), a program of the NIH Common Fund, emerged from UNITE as another NIH effort to support health disparities research. The goals of ComPASS are to develop, share, and evaluate community-led structural interventions that leverage partnerships across multiple sectors to reduce health disparities and increase health equity and to develop a new health equity research model for community-led, multisectoral structural intervention research across NIH and other Federal agencies.

HHS Roadmap for Behavioral Health Integration. The *HHS Roadmap for Behavioral Health Integration* advances President Joe Biden's strategy to address our national mental health crisis. The HHS roadmap provides a general overview of the approach HHS has taken to move toward integrated care and highlights selected programs and policy actions, including strengthening system capacity by expanding "the supply and diversity of the behavioral health workforce" and "reducing health disparities and improving behavioral health outcomes" by increasing "the workforce of practitioners with the skills to serve racial and ethnic minority communities." HHS is investing in programs that are helping recruit, train, and support a diverse workforce capable of offering fully integrated and culturally and linguistically appropriate services.

NIMH-Supported Research. As the lead Federal agency for research on mental disorders, NIMH supports innovative clinical and basic research that promises to reduce disparities and enhance care for all. The webpage titled "NIMH's Approach to Mental Health Disparities Research" provides detailed information on these research efforts.

23. Chen et al. 2021. *Acad. Psychiatry* PMID: 33825171.
24. Saboor et al. 2022. *Psychiatr. Q.* PMID: 35247156.
25. Silver et al. 2019. *Health Equity* PMID: 31312783.
26. Takeshita et al. 2020. *JAMA Netw. Open* PMID: 33165609.
27. Walubita et al. 2022. *LGBT Health* PMID: 35180360.
28. Hargrove et al. 2020. *J. Racial Ethn. Health Disparities* PMID: 31997286.
29. Vu et al. 2019. *BMC Public Health* PMID: 30674293.
30. Barker et al. 2022. *Soc. Psychiatry Psychiatr. Epidemiol.* PMID: 36149450.

NIH Promotes Greater Understanding of Sex Differences in Substance Use Disorders and Their Treatment

Rita Valentino, Ph.D.
Director, Division of Neuroscience and Behavior
National Institute on Drug Abuse

Epidemiological evidence supports the existence of appreciable sex differences in the incidence, natural history, characteristics, and treatment of substance use disorders (SUDs) and associated mental health issues.[1–3] For instance, men are more likely than women to use alcohol, but men and women who initiate substance use are equally susceptible to SUDs. NIH and the researchers it supports strive for a deeper understanding of the sex differences relevant to SUDs. Personalized prevention and treatment efforts could benefit from greater insight into the role of sex in the initiation of substance use, the progression of SUDs, and treatment seeking, engagement, and outcomes.

Patterns of initiation and regular drug use differ between men and women. Women are more likely than men to use drugs to cope with stress or pain and more often report abuse or trauma as a contributing factor. In contrast, drug use among men is more commonly associated with impulsivity or risk-taking behaviors. Women tend to initiate substance use at a later age, and their progression from initiation to SUD tends to be more rapid.[3] Women with SUDs are more likely than men to have a comorbid psychiatric disorder.[4] For example, more women than men have stress-related diseases, such as depression, anxiety, and post-traumatic stress disorder—all of which are risk factors for SUD. Compared with men, women recovering from SUDs tend to have stronger, more frequent cravings and a greater likelihood of relapse, particularly relapse triggered by stressors.[5]

Pregnancy poses unique challenges for women who use substances because it is a time of dynamic physiological change. Substance use can affect the cardiovascular, metabolic, and immune function of the pregnant individual, potentially posing severe health risks to both mother and fetus. Maternal substance use can harm fetal development through drug exposure via the placenta and can affect placental functions that help to maintain the pregnancy. Alcohol use during pregnancy can affect all stages of fetal development and may result in a range of fetal alcohol spectrum disorders, including fetal alcohol syndrome.

Mothers who use drugs can give birth to substance-dependent babies, resulting in neonatal abstinence syndrome. Marijuana use among pregnant women, the incidence of which has increased with wider legalization, has been associated with negative effects on fetal growth.[6] Drug use can also affect the development of circuits in the maternal brain that support caregiving behavior, which could have enduring consequences on the child's behavioral development. Further research is necessary to assess whether these neurological changes are associated with clinical outcomes. Between 2015 and 2019, maternal mortality related to drugs and alcohol increased by more than 17% in the United States,[7] contributing to our Nation's increasing rates of maternal morbidity and mortality.

In addition to biological considerations, sex differences and health disparities related to treatment exist. Women with opioid use disorder (OUD) are less likely to access treatment than men with the disorder, and some women may have more severe withdrawal symptoms.[8] However, among those with OUD, women are less likely than men to receive buprenorphine or naltrexone, effective treatments for OUD. Systemic issues prevent many women from receiving medication-assisted treatment for OUD. For instance, in some Appalachian states disproportionately affected by the opioid crisis, many providers of opioid agonist therapies do not treat pregnant women and do not accept medical insurance.[9] Further, some evidence suggests that women overdosing on opioids are less likely to receive emergency naloxone. Many pregnant women with OUD do not seek treatment for fear that they might lose custody of future children.

NIH supports research to build on these findings, to promote greater understanding of sex differences pertaining to SUDs, and to destigmatize these disorders. The National Institute on Drug Abuse (NIDA) has awarded a SCORE grant (Specialized Centers of Research Excellence on Sex Differences, RFA-OD-18-004) to the Medical University of South Carolina (MUSC). MUSC researchers engage in translational research on SUDs, sex and gender differences, and women's health as well as in outreach efforts to generate additional investigation in these areas. ORWH's BIRCWH (Building Interdisciplinary Research Careers in Women's Health) program offers additional funds (RFA-OD-21-006) to support mentoring, training, and career development of BIRCWH Scholars, who will learn more about sex and gender differences in SUDs and the effects of SUDs on women's health across the lifespan. With an improved understanding of the sex and gender differences in SUD biology and of associated treatment and care, the BIRCWH Scholars will

be able to improve the health of women and reduce health disparities in the treatment of SUDs. NIH leadership hopes that these and other research efforts will improve prevention, detection, diagnosis, and treatment of SUDs.

References

1. Kessler et al. 1994. Arch. Gen. Psychiatry PMID: 8279933.
2. GBD 2017 Disease and Injury Incidence and Prevalence Collaborators. 2019. Lancet PMID: 30496104.
3. Becker and Chartoff. 2019. Neuropsychopharmacology PMID: 29946108.
4. Santo et al. 2022. Drug Alcohol Depend. PMID: 35797876.
5. McRae-Clark et al. 2017. J. Neurosci. Res. PMID: 27870396.
6. Brar et al. 2021. J. Matern. Fetal Neonatal Med. PMID: 31711334.
7. Howard et al. 2021. JAMA. PMID: 34698794.
8. NIDA. "Substance Use in Women DrugFacts." Accessed 11-Oct-2022.
9. Patrick et al. 2019. Subst. Abus. PMID: 29949454.

IN THE JOURNALS

Pandemic-Related Socioeconomic Risks Increase Likelihood of Mental Health Problems in Women

(Original article by Lindau et al. 2021. J. Womens Health (Larchmt.) PMID: 33818123.)

The COVID-19 pandemic and its associated social and economic disruptions have compounded women's health-related socioeconomic risks (HRSRs), a recent study finds. Difficulties with finances, housing, food security, transportation, and interpersonal violence have increased the likelihood of women's experiencing health problems, particularly mental health issues such as depression, anxiety, and post-traumatic stress.

Stacy Tessler Lindau, M.D., and colleagues analyzed data from a 2020 survey of a demographically representative cohort of 3,200 English-speaking U.S. women. In their statistical analysis, the NIH-supported researchers found that many study participants reported new or worsening HRSRs. In all, 49% had new or worsening HRSRs, and 29% with no HRSRs prior to the pandemic reported one or more new HRSRs. Rates of depression and anxiety among respondents were double the pre-pandemic benchmarks. The chances of having depression, anxiety, and post-traumatic stress symptoms were two to three times higher among women with at least one new or worsening HRSR (compared with those without one). Higher numbers of HRSRs correspondingly increased the likelihood of depression, anxiety, and post-traumatic stress symptoms.

Survey respondents also reported increased new instances of and worsening interpersonal violence. (Survey categories for interpersonal violence included physical violence as well as threats of harm, being screamed or cursed at, and being insulted or talked down to.) Among women with no pre-pandemic HRSRs, 24% reported experiencing interpersonal violence. Among those with one or more pre-pandemic HRSRs, 13% reported new interpersonal violence and 6% reported increased interpersonal violence.

The researchers conclude that current and future mental health care needs—particularly those of women and other vulnerable populations—will likely exceed available resources.

Integrating Prenatal and Mental Health Care for Black Women May Mitigate Health Disparities

(Original article by Kemet et al. 2022. Matern. Child Health J. PMID: 34519952.)

The United States has some of the highest maternal morbidity and mortality (MMM) rates among high-income, industrialized nations. (For more information, see the NIH MMM Web Portal.) Extreme racial and ethnic health disparities exist in

regard to pregnancy-related death and other adverse pregnancy outcomes. Black women in particular experience disproportionately high rates of maternal and neonatal death, preterm birth, and having babies born small for their gestational age.

Evidence suggests that group prenatal care improves maternal and perinatal outcomes, particularly among Black women. As such, Shakkaura Kemet, M.D., M.P.H., and colleagues analyzed data generated from a focus group of 11 Black women receiving maternal health services from the Black Infant Health program. The focus group concentrated on improving infant and maternal health and on developing EMBRACE, a racially concordant group prenatal care curriculum for Black birthing people.

Study participants unequivocally expressed how behavioral health services were necessary to mitigate perinatal health disparities. The focus group's comments prioritized (1) overcoming barriers to accessing mental health care services for new or worsening mental health issues during pregnancy; (2) addressing the components of structural racism that result in patient mistrust of the health care system as a whole and mental health service providers in particular; and (3) fostering advocacy among care providers and patients for improving access to and quality of culturally competent mental health care for Black birthing people.

The researchers conclude by stating that the COVID-19 pandemic, which has exacerbated health disparities worldwide, underscores the benefits of race-conscious integrated mental and maternal health services and group care.

WOMEN IN SCIENCE

FEATURED RESEARCH AND PERSPECTIVES

Nursing Panel Examines Pandemic's Effects on Women's and Nurses' Mental Health, Makes Policy Recommendations

(Commentary by Berg et al. 2022. Nurs. Outlook *PMID: 35843755.)*

A recent article by Judith A. Berg, Ph.D., and her colleagues from the American Academy of Nursing's Expert Panel on Women's Health discusses how domestic, workplace, economic, and other types of changes associated with the COVID-19 pandemic have affected the mental health of women across the lifespan. The authors also describe the particular challenges and mental health issues of registered nurses (RNs) throughout the pandemic.

The pandemic has disproportionately amplified women's stressors, such as increased caregiving responsibilities, greater domestic demands, and new or worsening financial troubles and concerns. Such stressors have had significant mental health effects on women of all ages. Women in the perinatal period have experienced increased symptoms of depression and anxiety as well as less access to psychiatric care. Although some research indicated that older women had greater mental health resistance in the early stages of the pandemic, later analysis showed that older women have reported more anxiety and depression than older men (with rates differing among racial and ethnic groups, among income demographics, and between those living alone and those living with others). Females from adolescence to older age lacked their usual access to social networks, which have long been associated with women's resilience. Gender-disaggregated data on adolescents and children remain sparse. However, regardless of gender, children ages 3–6 as well as children and adolescents with special needs have experienced particularly adverse mental health effects. The pandemic years have also seen a worldwide increase in family violence, partly a result of increased stress, stay-at-home orders, and unemployment.

Over the course of the pandemic, RNs—of whom more than 85% are women, according to recent U.S. census data—have experienced increased workplace stressors. RNs caring for those with COVID-19 have dealt with high numbers of patient deaths, worked with insufficient personal protective equipment, faced abuse from people who are anti-vaccination and think the pandemic-related safety policies were too restrictive, and worried about contracting COVID-19 and transmitting it to their families. In 2021, the American Nurses Association reported that over half of RNs felt overwhelmed.

Dr. Berg and colleagues conclude with several policy recommendations to assist caregivers; to support benefits related to unemployment and child care; to fund research on the pandemic's impact on women's domestic, work, sexual, and reproductive lives; to address the pandemic's effects on the nursing workforce; to develop resilience training for health care providers; to increase resources and safety for those who have experienced abuse; and to develop and fund appropriate mental health and substance use services for women.

SCIENTIST SPOTLIGHT

Margaret S. Stockdale, Ph.D.

Margaret "Peggy" S. Stockdale earned her doctorate in industrial/organizational psychology from Kansas State University in 1990. She then accepted a tenure-track position in the Department of Psychology at Southern Illinois University (SIU) as a member of the Applied Experimental Psychology (now called Applied Psychology) doctoral program and became a full professor in 2004. In 2006, she enrolled in SIU's Master of Legal Studies program, and she earned that degree in 2008. In 2010, she took a position as Chair of the Linguistics Department to gain administrative experience, and in 2012, she became the Chair of the Department of Psychology at Indiana University–Purdue University Indianapolis (IUPUI). She remained in that position until 2020. She now serves as a faculty member in that department.

What does IUPUI's Women in Work (WoW) Laboratory investigate?

The WoW Lab, a term coined by one of my former students, focuses on gender-related research in the workplace. Our research focuses on sexual and gender-based harassment, which has been my primary line of research throughout my career. We have also studied issues related to work-life balance as well as stereotypes of women and men in STEMM disciplines.

As the #MeToo movement gained momentum in 2017, I edited a two-issue volume on sexual harassment scholarship for *Equality, Diversity and Inclusion: An International Journal*. Therein, students working in the WoW Lab reported their study on how media attention on high-profile harassers affected people's perceptions and interpretations of their own harassment experiences, which in part explains why so many women responded to the #MeToo rallying cry.

Another group of WoW students and I began the first of several studies on the effects of perceptions of power and harassment. We found that the embodiment of seemingly good forms of power, such as using power to be responsible for others, can create a moral license of sorts. The perception of this license enables those embodying "good power" to harass without maligning their reputation. Indeed, subsequent research showed that perceivers are less likely to find a responsibility-focused power holder culpable of sexual harassment than a self-focused power holder who has engaged in the same behavior. We built on this body of research in developing our proposal to NIH for the project Indiana CARES (Creating Accountability and Building Relationships to Eradicate Sex Harassment).

What problem does the CARES grant strive to address, and what sort of research will it support?

NIH recently identified a need to address sexual harassment in science training environments, after the Advisory Committee to the Director Working Group on Changing the Culture to End Sexual Harassment reported that almost 38% of women graduate students, particularly those from minoritized racial groups, have experienced sexual harassment or other forms of hostility from faculty or staff members. Ann C. Kimble-Hill, Ph.D., and I developed the Indiana CARES proposal in response to NIH's *Notice of Special Interest (NOSI): Interventions Designed to Change the Culture to Mitigate or Eliminate Sexual Harassment in the Biomedical Research Enterprise* (NOT-OD-21-150). We proposed to investigate how research mentors' daily experiences of power affect their mentees, both positively and negatively, and then to build an intervention focusing on empathy training and other methods of changing the culture within biomedical health research labs so that women trainees, particularly those with marginalized and historically oppressed identities, can thrive. Indiana CARES will first conduct a national study of NIH-funded researchers and their mentees, who will complete daily diaries reporting on their emotions and experiences over a 10-day period. We hope to learn how research mentors' daily feelings of power impact their mentees' experiences in the lab. Later, Indiana CARES will develop and evaluate an intervention that will be delivered to a random sample of biomedical health graduate research programs on the IUPUI campus.

Why is this type of research necessary, as laws and policies prohibit sexual harassment in the workplace?

Laws and policies that prohibit sexual harassment are necessary but not sufficient tools in the fight to eliminate sexual and gender-based harassment. The prevalence of sexual harassment remains disturbingly high, and as the NIH Advisory Committee to the Director noted, "the best path to eliminating sexual harassment is through fostering transparency, accountability, integrity, equity, and justice in the research environment." Our program of research and intervention is designed to provide those engaged in the research enterprise with the knowledge and tools to turn their research labs into places that support, nurture, and empower the next generation of female scientists.

Why is it important to support and encourage the next generation of female scientists, and how might this research contribute to this support?

The answer is simple. The biomedical workforce needs the talents and insights of women of all cross sections of identity to advance scientific discovery and to improve biomedical professional practice. To build and sustain this workforce, mentorship of underrepresented minority and women trainees in biomedical graduate and professional programs must be inclusive, harm-free, and supportive. We aim to address the critical need for interventions that disrupt this pattern of power-driven harassment and broaden career building opportunities made available for historically minoritized trainees.

INSTITUTIONAL SPOTLIGHT

Rochester Institute of Technology Models Effective Practices for Equity

The Rochester Institute of Technology (RIT), one of the winners of the NIH Prize for Enhancing Faculty Gender Diversity in Biomedical and Behavioral Science, has developed a multipronged approach to supporting faculty gender diversity across the university's many biomedical and behavioral science departments as well as departments in other disciplines. RIT has implemented a framework involving (1) creating opportunities, (2) changing the culture, (3) valuing difference, and (4) providing targeted support. Two RIT programs in particular, AdvanceRIT and Personalized Healthcare Technology (PHT180), support gender equity in the biomedical and behavioral sciences. The university-wide AdvanceRIT, initially developed through an ADVANCE Institutional Transformation grant from the National Science Foundation (NSF), implements programs to connect women faculty members, engage them, improve their work lives, provide opportunities for professional and leadership development, recruit faculty members from many different demographics, and partner with RIT organizations, departments, and colleges to support gender equity and positive change. PHT180, a health care research network, works in tandem with AdvanceRIT to involve scholars from all of the university's colleges. PHT180 creates "radically diverse" research teams of mentors and collaborators to research and develop data, devices, treatments, diagnoses, and therapies to advance personalized medicine and lower health care costs. For these and other programs, ORWH recognized RIT with the NIH Prize for Enhancing Faculty Gender Diversity in Biomedical and Behavioral Science and thanks the university for its continuing efforts toward diversity, equity, and inclusion.

IN CASE YOU MISSED IT

NAMI Blogger Discusses Lack of Diversity Among Mental Health Care Providers

Rebecca Kim, a graduate student in social work with a background in psychiatric nursing, describes problems and challenges associated with the lack of racial and ethnic diversity in the mental health care workforce. Her article on the National Alliance on Mental Illness (NAMI) website cites 2015 statistics from the American Psychological Association indicating that 86% of psychologists in the United States were White and 2019 statistics from the Bureau of Labor Statistics showing that almost 70% of social workers and 88% of mental health counselors were White. This lack of diversity presents public health challenges to our increasingly diverse country. Ms. Kim discusses the problems that can arise from a lack of cultural literacy between ethnic groups as well as the need to recruit more people of color into the mental health workforce, while cautioning that "ethnic matching," the practice of pairing a client with a provider based on race or ethnicity alone, is not always a sound practice.

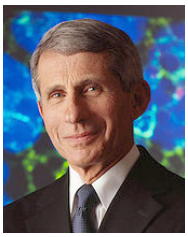
Marginalized Communities Have Less Access to Mental Health Care

Members of minoritized communities are less likely to seek and use mental health care. A recent article in *Medical News Today* discusses the challenges facing such individuals in accessing these services—costs, inadequate health insurance, provider discrimination, stigma, mistrust, and limited health literacy. In relation to White clients with a mental illness, individuals from minoritized populations are more likely to receive a lower quality of care, a misdiagnosis, or an underdiagnosis, which further compounds mental health disparities.

NIH Awards Grant to Help Eliminate Sexual Harassment in Biomedical Research

ORWH and the National Institute of General Medical Sciences (NIGMS) recently awarded a first-of-its-kind grant stemming from *Notice of Special Interest (NOSI): Interventions Designed to Change the Culture to Mitigate or Eliminate Sexual Harassment in the Biomedical Research Enterprise* (NOT-OD-21-150). This grant, awarded to a research team led by Peggy Stockdale, Ph.D., of Indiana University–Purdue University Indianapolis (IUPUI), will support research on sexual harassment in science training environments as well as the development of an intervention for biomedical laboratories. This intervention, called Indiana CARES (Creating Accountability and Building Relationships to Eradicate Sex Harassment), will focus on empathy training and cultural change within scientific workplaces. See this issue's *Scientist Spotlight*, on pp. 11–12, for more information on Dr. Stockdale and Indiana CARES.

National Institute of Allergy and Infectious Diseases Director Anthony Fauci Steps Down



Former NIAID Director Anthony Fauci, M.D.

After 54 years at NIH, 38 of them as the Director of the National Institute of Allergy and Infectious Diseases (NIAID), Anthony Fauci, M.D., stepped down from his positions at the end of 2022. In addition to serving as the Director of NIAID, Dr. Fauci was the Chief of the Laboratory of Immunoregulation and the Chief Medical Advisor to President Joe Biden. As the Nation's top infectious disease expert, Dr. Fauci dedicated his life's work to understanding and treating complex diseases such as HIV, asthma, H1N1, Zika, and Ebola and became the public face of research, mitigation, and vaccination efforts during the first years of the COVID-19 pandemic. President Biden noted, "Because of Dr. Fauci's many contributions to public health, lives here in the United States and around the world have been saved. … The United States of America is stronger, more resilient, and healthier because of him." You can read Dr. Fauci's statement announcing his retirement here. At the October 18, 2022, meeting of the Advisory Committee on Research on Women's Health (ACRWH), ORWH Director Janine A. Clayton, M.D., FARVO, stated that Dr. Fauci has contributed to "incredible advances in women's health," including researching Wegener's granulomatosis, preventing HIV transmission from mother to child, improving our understanding of sex differences in the immune response to influenza, and including pregnant people in COVID-19 research.

NCI Director Monica Bertagnolli, M.D.

Monica Bertagnolli Becomes New Director of the National Cancer Institute

On October 3, 2022, Monica M. Bertagnolli, M.D., officially began her role as the 16th Director of the National Cancer Institute (NCI). She is the first woman to serve in the position. Dr. Bertagnolli has decades of experience as a surgical oncologist, professor, scientist, and leader of cancer research projects, notably President Biden's Cancer Moonshot initiative. She is also an advocate for increasing the diversity of patients in clinical trials and has championed patient-focused programs in rural and remote communities. Dr. Bertagnolli succeeds Norman E. "Ned" Sharpless, M.D., who stepped down as Director in April 2022. Douglas R. Lowy, M.D., was NCI's Acting Director between the time Dr. Sharpless stepped down and the time Dr. Bertagnolli began, and he has resumed his role as Deputy Director of NCI and is continuing his work as the Chief of the Laboratory of Cellular Oncology in NCI's Center for Cancer Research. ORWH congratulates Dr. Bertagnolli and thanks Drs. Lowy and Sharpless for their service.

Former CIT Director Andrea Norris, M.B.A.

NIH Chief Information Officer, Director of the Center for Information Technology Andrea Norris Retires

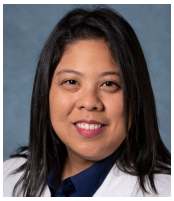
Andrea Norris, M.B.A., retired from her positions as NIH's Chief Information Officer and Director of the Center for Information Technology (CIT). For over a decade, Ms. Norris led a $1.6 billion technology portfolio that supported the research of NIH's 27 Institutes and Centers as well as researchers at more than 2,500 universities and medical centers across the country. Her remarkable 40-year career leading national management and technology programs and operations also included senior leadership roles at the National Science Foundation (NSF) and the National Aeronautics and Space Administration (NASA). Under Ms. Norris's leadership, NIH's communication and digital capabilities, including a broad range of NIH IT systems and services supporting research and operational activities, expanded significantly. She also established the NIH Science and Technology Research Infrastructure for Discovery, Experimentation, and Sustainability (STRIDES) Initiative, which accelerated the adoption of cloud computing by the NIH-supported biomedical research community. ORWH congratulates and thanks Ms. Norris for her exceptional career.

NOTEWORTHY

CDC Launches Global Health Equity Website with New Guiding Principles for Health Communication

The Centers for Disease Control and Prevention (CDC) recently launched a website dedicated to global health equity, which articulates and advances CDC's vision for "a world in which everyone can achieve the highest attainable level of health, and no one is disadvantaged from achieving this potential because of social position or any other socially, economically, demographically, or geographically defined circumstance or physical condition." As equitable health communication remains integral to this vision and to overcoming health disparities, CDC has set forth guidelines for language and methods that are "inclusive, respectful, non-stigmatizing, bias-free, and appropriately tailored for … diverse audiences" on its Global Public Health Equity Guiding Principles for Communication webpage.

STAFF UPDATES



Melissa Wong, M.D., is an Assistant Professor of Obstetrics & Gynecology at Cedars-Sinai Medical Center, where she holds a joint appointment in the Division of Informatics. After completing residency training, she worked as an OB-GYN generalist for 4 years before resuming pursuit of her own educational interests, this time fellowship training in maternal–fetal medicine and a concurrent master's degree in health delivery science. Her current research focuses on artificial intelligence in obstetrics for reducing disparities in maternal care. She joined ORWH as a Staff Physician Scientist in 2022.

Karen Wylie, Ph.D., joined ORWH as a Health Science Policy Analyst in September 2022. She received her Ph.D. from Pennsylvania State University, where she studied molecular biology and wrote a thesis on the human DNA polymerase kappa. She then accepted a postdoctoral fellowship at the National Cancer Institute. Prior to rejoining NIH, Dr. Wylie worked as a Program Officer for the Congressionally Directed Medical Research Programs within the U.S. Department of Defense.

Publications by ORWH Staff

ORWH Director Janine A. Clayton, M.D., FARVO, and colleagues published "Multicenter Prospective Validation Study for International Chronic Ocular Graft-Versus-Host Disease Consensus Diagnostic Criteria" in *The Ocular Surface*. The article examines the diagnostic criteria for chronic ocular graft-versus-host disease (GVHD) developed by the International Chronic Ocular GVHD Consensus Group and finds that they have good sensitivity, specificity, and predictive value and that they are in good correlation with NIH criteria.

ORWH Associate Director for Clinical Research Sarah M. Temkin, M.D., and colleagues published "Current Gaps and Opportunities in Screening, Prevention, and Treatment of Cervical Cancer" in the journal *Cancer*, summarizing public health needs related to cervical cancer identified during Advancing NIH Research on the Health of Women: A 2021 Conference.

Dr. Clayton; **Dr. Temkin**; **ORWH Associate Director for Science Policy, Planning, and Analysis Samia Noursi, Ph.D.**; **ORWH Special Volunteer Pamela Stratton, M.D.**; and BIRCWH Principal Investigator, ACRWH member, and NIH-funded researcher **Judith G. Regensteiner, Ph.D.**, published "Perspectives from Advancing National Institutes of Health Research to Inform and Improve the Health of Women: A Conference Summary" in *Obstetrics & Gynecology*, detailing information from Advancing NIH Research on the Health of Women: A 2021 Conference.

Dr. Stratton and colleagues published "Efficacy of Cochleated Amphotericin B in Mouse and Human Mucocutaneous Candidiasis" in *Antimicrobial Agents and Chemotherapy*. Their mouse model study showed that cochleated amphotericin B may be an effective treatment for patients with treatment-resistant chronic mucocutaneous candidiasis.

UPCOMING EVENT

Diverse Voices—Cancer Disparities: Methods and Measurement of Racial and Ethnic Diversity

January 26, 2023 | 3:00 p.m. – 4:00 p.m. EST

For up-to-date information, visit www.nih.gov/women.

NIH Office of Research on Women's Health (ORWH)

6707 Democracy Boulevard, Suite 400
Bethesda, MD 20817
Phone: 301-402-1770

ORWHinfo@mail.nih.gov
Twitter: @NIH_ORWH
Facebook: /NIHORWH

To subscribe to future issues of Women's Health in Focus at NIH, *click here or visit us on the web at nih.gov/women.*

This publication was publicly funded by the NIH Office of Research on Women's Health.

January 2023