**INTERDISCIPLINARY** **ASSOCIATION FOR POPULATION HEALTH SCIENCE**

# 2022 Annual Meeting

## Abstract Contributed Session (ACS) and Poster Session Abstracts

**Health equity**

## Racial/ethnic discrimination and hypertension risk among a diverse cohort of US women: Do relationships vary by race/ethnicity and educational attainment? Symielle Gaston*

Symielle Gaston Dale Sandler Chandra Jackson

**Introduction:** Racial/ethnic discrimination (RED), a structural and interpersonal stressor that can be internalized, has been associated with hypertension risk. Although exposure to RED may vary by race/ethnicity and social settings, few studies have considered potential effect modification by race/ethnicity and educational attainment – a determinant of both work and home environments.
**Methods:** To investigate race/ethnicity and educational attainment as modifiers of the RED-hypertension association, we used data from 29,078 (91% NHW, 5% Black/African American (BAA), and 4% Hispanic/Latina of any race) Sister Study participants who were 35-74 (mean 54±8.7) years old and without hypertension at baseline (2003-2009). In 2008-2012, participants reported lifetime everyday (e.g., treated unfairly at a store) and major (e.g., unfair treatment in home renting/mortgaging) RED (yes/no), and from baseline to 2019, participants reported healthcare provider diagnosis of hypertension. Adjusted Cox Proportional Hazard regression estimated hazard ratios (HRs) and 95% confidence intervals (CIs), and additive interactions (AI) were tested. **Results:** Over a mean 10±3.7 years of follow-up, 7,411 (6,556 NHW, 558 BAA, 297 Latina) women reported hypertension. Prevalence of RED was highest among BAA women with ≥college degree (e.g., major RED: 56% vs. range: 2% NHW$_{\leq high school}$ – 45% BAA$_{some college}$). The association of major RED with increased risk of hypertension was stronger among NHWs vs. BAAs ($p_{AI}$=0.04) and strongest among women who attained ≤high school (HR = 1.75 [95% CI: 1.21-2.54] vs. HR$_{range}$ 1.09-1.11 for other education levels, $p_{AI}$=0.01). **Conclusion:** NHW women and women with lower educational attainment had higher RED-associated hypertension risk; but, BAA college graduates reported RED most often. Replication and further study of upstream and individual-level risk and resiliency factors in younger, diverse samples may explain findings and inform prevention and intervention efforts.

**Do black women residing in cities have a higher prevalence of invasive hysterectomy than those living in the rest of the state compared to white women?** Felicia Pugh* Felicia Pugh

Background: Hysterectomy is the most common treatment for benign uterine conditions in the United States. Data suggest that one in nine women will have the procedure in their lifetime. National and regional studies indicate that invasive abdominal or open hysterectomy (OH) rates are declining. However, black women still face higher prevalence and greater odds of having an OH than white women. To our knowledge there are no studies of hysterectomy trends at state or city levels. Our aim is to evaluate these trends between black and white women in Louisville and Kentucky.
Methods: In this study, benign uterine diagnoses and hysterectomy procedures for admissions were identified using ICD-10 codes in Kentucky Cabinet for Health and Family Services inpatient and outpatient data between 2016-2020. Hysterectomy rates were calculated, and multivariable logistic regression was used to estimate odds ratios (OR) and 95% confidence intervals (CI) for abdominal hysterectomy between black and white women, adjusting for age, diagnosis, and volume of hysterectomy procedures.
Results: OH procedures for black women decreased by 52% in Kentucky (5.88 to 2.85/10,000) and by 46% (2.89 to 1.55/10,000) for white women from 2016 to 2020. However, in Louisville, the rates of OH are higher (7.45 to 5.30/10,000) and declined by 29% for black women, and 30% for white women (3.13 to 2.18/10,000). The odds of an OH among black women are 2.24 (95% CI, 1.79-2.80) compared to white women in Louisville. Black women in the rest of the state have 1.63 odds of OH than white women (95% CI 1.40-1.92).
Conclusion: The rates and odds of OH are higher for black women living in Louisville than those living in rest of the state, based on these results more investigation could reveal factors that contribute to inequality in uterine care delivered to women. The next step in this work will evaluate practice patterns in the city for responses that engage the community in awareness, surveillance, and accountability.

**The Diabetes Health Plan and Medication Adherence Among Individuals with Low Incomes: A Quasi-experimental study** Kimberly Narain* Kimberly Narain Norman Turk O. Kenrik Duru Tannaz Moin Sam Ho Carol Mangione

**Objective:** We investigated the impact of the Diabetes Health Plan (DHP), a Value Based Insurance Design (VBID) product that lowers out-of-pocket costs for diabetes-related medications and clinical visits, on adherence to oral hypoglycemic medications among low-income adults with Type 2 Diabetes (T2DM) and assessed for differential impacts of the DHP across baseline medication adherence level.

**Data Source**: Cohort of adults with T2DM, an annual household income <$30,000, and who were continuously enrolled in an employer-sponsored UnitedHealthcare plan for at least two years.

**Study Design**: To examine the impact of the DHP on medication adherence, we employed a linear regression Difference-In-Differences (DID) approach with a matched comparison group. To assess for differential DHP effects across adherent vs. non-adherent patients, we ran a difference-in-difference-in-differences (DDD) analysis by including an interaction term that included indicators for DHP exposure status, time and low vs. high baseline medication adherence.

**Data Collection**: The analytic data set is limited to employer groups that purchased the DHP and standard benefit plans from UnitedHealthcare, with internal pharmacy contracts, complete pharmacy claims data and sufficient medical claims and lab data to identify employees with T2DM.

**Principal Findings**: Our DID analysis did not show improved medication adherence associated with employer DHP adoption. The DDD model suggested a difference between DHP-exposed and comparison employees when comparing the relative effect on patients who were adherent vs. non-adherent at baseline, as suggested by the significant three-way interaction term. This effect was driven by the 8.2 percentage point increase in medication adherence for the DHP subsample that was non-adherent at baseline.

**Conclusions:** The DHP may benefit low-income patients with low baseline medication adherence. VBID may be an important strategy for mitigating income disparities in T2DM outcomes.

**Health-related social risks and increased smoking early in the pandemic: Role of mental health difficulties** Victoria Winslow* Victoria Winslow Jyotsna Jagai Jennifer Makelarski Milkie Vu Kristen Wroblewski Stacy Tessler Lindau

Tobacco use among U.S. women has trended downward over the last few decades, but rates remain high among women living in poverty. Mechanisms driving smoking among these women include using tobacco to suppress appetite when food access is limited, smoking to cope with high stress levels, and lower access to smoking cessation resources. We examine patterns of tobacco use in relation to health-related social risks (HRSRs) among U.S. women early in the pandemic and whether mental health symptoms mediate these relationships.

Data were obtained from the April 2020 National U.S. Women's Health COVID-19 Study, a cross-sectional survey of 3200 women ages 18+ years. Among current smokers, we modeled adjusted odds of smoking more since the start of the pandemic (vs. same or less) by incident (new in the early pandemic) or worsening HRSRs since the start of the pandemic. Structural equation modeling was used to assess anxiety, depression and traumatic stress as mediators of the relationship between HRSRs and smoking more since the pandemic.

Nearly half (48%) of current smokers reported smoking more since the start of the pandemic. One or more worsening HRSRs (aOR 2.2, 95% CI 1.5-3.0), worsening interpersonal violence (aOR 2.5, 95% CI 1.3-4.9), incident (aOR 2.2, 95% CI 1.3-3.6) and worsening food insecurity (aOR 2.8, 95% CI 2.0-4.0), and worsening transportation difficulties (aOR 2.1, 95% CI 1.3-3.2) were significantly associated with smoking more. Anxiety and depression, but not traumatic stress, were partial, significant mediators of the association between smoking more and any worsening HRSRs, food insecurity, interpersonal violence and transportation difficulties (range of proportion mediated: 0.13 to 0.28).

Anxiety and depression partially explain the relationship between smoking more and worsening, but not incident, HRSRs in the early pandemic. Addressing modifiable HRSRs and mental health may help reduce tobacco use during crisis.

**Environmental factors**

**Neighborhood Greenspace Associated with Decreased Obesity during COVID-19** Stephanie Mayne* Stephanie Mayne Shannon Kelleher Chloe Hannan Mary Kate Kelly Maura Powell George Dalembert Katie McPeak Brian Jenssen Alexander Fiks

Pediatric obesity rates increased during the COVID-19 pandemic, widening disparities. Green spaces might support activity and reduce stress during times of physical distancing and school closures. We examined associations of neighborhood greenspace with changes in pediatric obesity (BMI >95th percentile) during the pandemic. We extracted electronic health record data from a large pediatric primary care network to create a retrospective cohort of patients aged 2-17 years with visits in June-December 2019 (pre-pandemic) and June-December 2020 (pandemic). Neighborhood greenspace was defined using census tract-level mean normalized difference vegetation index (NDVI), a widely-used satellite imagery-based measure of vegetation. We used longitudinal generalized estimating equations Poisson models to estimate associations of NDVI with changes in obesity risk during the pandemic, accounting for clustering by census tract and adjusting for age, sex, race/ethnicity, insurance, month, neighborhood economic deprivation, social fragmentation, supermarket access, and urbanicity. Similar models estimated risk of new onset obesity during the pandemic among the subset of children who were not obese pre-pandemic. Among 81,418 children (mean age: 8.4 years, 18% Black), the magnitude of change in percentage obese during the pandemic was lower among children in greener neighborhoods, with an increase of 5.2% in NDVI quartile 1 (least green) compared to 2.2% in quartile 4 (most green). After adjustment, children in quartiles 2-4 had a smaller increase in obesity risk during the pandemic compared to quartile 1, with risk ratios (RR) of 0.96 (95% CI: 0.93, 0.99), 0.94 (0.91, 0.97), and 0.96 (0.92, 1.00). Children in quartiles 3-4 who were not obese at baseline had lower risk of new onset obesity versus quartile 1 [RR 0.85 (0.74, 0.97); RR 0.76 (0.65, 0.88)]. In this longitudinal cohort, children in greener neighborhoods had smaller increases in obesity risk during the COVID-19 pandemic.

**LGBTQ+**

**Gender and Sexual Identity Disparities in COVID-19 Coping Patterns** Laura Houghtaling*
Laura Houghtaling

The National Couples' Health and Time Study (NCHAT) dataset provides a rich and unique opportunity to explore experiences of sexual and gender minority (SGM) populations during the COVID-19 pandemic through a nationally representative population-based sample of married or cohabitating adults aged 20-60 years with oversamples of racial, ethnic, and sexual minorities. A literature review of COVID-19 coping patterns in SGM populations found more deleterious coping behaviors among SGM individuals compared to their heterosexual and cisgender counterparts. None of the studies reviewed were nationally representative and they explored limited dimensions of sexual and gender identity. This proposal examines the disparities in coping patterns by SGM status and couple type using the NCHAT dataset (N=3,610). We hypothesize that identifying with a non-heterosexual or non-monosexual group would increase the number of negative coping behaviors compared to the heterosexual and monosexual group based on the minority stress model. We also hypothesize that there are significant differences within and between SGM subgroups. There is very limited research examining bisexual adults in same vs different gender couples. I suspect to see differences in the number of positive vs negative coping patterns within subgroups with the worst outcomes for bisexual or non-monosexual women in a different-gender couple. We present descriptive statistics for all study variables and compare characteristics between SGM groups by couple type using Kruskal-Wallis test for continuous variables and Pearson $\chi^2$ or Fisher's exact test for categorical variables in Table 1. We also present results of Poisson regression models adjusted for hypothesized confounding variables.

**Infectious or Microbial**

## Trends in Child and Adolescent Vaccine Administration Before and During the COVID-19 Pandemic
Nicole Hair* Nicole Hair

The COVID-19 pandemic disrupted essential health services, including routine vaccinations for children and adolescents. Early in the pandemic, many clinics and practices were closed to non-essential health services. Concerns regarding potential exposure to COVID-19 likely led some parents to choose to delay preventive care for their children. Disruptions to vaccination services raise the likelihood of outbreaks of vaccine-preventable disease and may further exacerbate long-standing geographic and racial disparities in vaccination coverage.

The aims of this study are (1) to describe the effects of the COVID-19 pandemic on routine child and adolescent vaccinations in the United States and (2) to test whether observed patterns vary by vaccine type, geographic region, and race/ethnicity.

We draw upon pediatric patient records from two national electronic health record (EHR) vendors, Allscripts and Practice Fusion, to examine weekly trends in the number of doses of routine child and adolescent vaccines administered from January 2019 through December 2021. We restrict our attention to age-appropriate vaccinations included in the child and adolescent immunization schedule published by the CDC. To measure the impact of the COVID-19 pandemic, we use interrupted time series analysis to quantify changes (level and slope) in weekly doses administered before and during the COVID-19 pandemic. We define the pre- and post-pandemic periods relative to the week of March 13, 2020, when a national emergency concerning COVID-19 was declared in the United States. Analyses are stratified by vaccine type (e.g., doses of the measles, mumps, and rubella (MMR) or tetanus, diphtheria, and acellular pertussis (Tdap) vaccines), geographic region (e.g., Northeast, Midwest, South, or West census regions), and patient race/ethnicity.

There were significant declines in routine child and adolescent vaccinations at the onset of the pandemic that persisted for months, suggesting that barriers to vaccination remained even after clinics and practices reopened. Estimated changes are largest for vaccines that are typically administered during infancy and among Black children.

**Health equity**

**Social Impacts of the COVID-19 Pandemic among Young Adults: Longitudinal Evidence and Inequalities by Gender, Socioeconomic Position, and Race** Thomas Fuller-Rowell* Thomas Fuller-Rowell Mona El-Sheikh

The COVID-19 pandemic has had an enormous effect on the daily lives of most people. Elucidating the impact of the pandemic and inequities in this impact by race, gender, and socioeconomic status (SES) is of global significance. In a fortuitous sample of young adult college students at a large four year university in the United States ($N$ = 263, 52% Black, 48% White, and 53% female), we examine changes in social isolation, experiences of discrimination, depressive symptoms, physical symptoms, and sleep-wake problems across three time points: before the pandemic (2018/2019 [W1]), during the first wave of the pandemic (May 2020 [W2]), and later in the pandemic around the time that vaccines were being approved (December 2020 [W3]). Results build on our prior published work with this cohort, which reported on changes across the first two time-points. Social isolation increased substantially from W1 to W2 and remained elevated at W3. These increases were greater among Black young adults than among Whites. No differences were evident by gender or SES. Experiences of discrimination increased among Black but not White young adults from W1 to W2. This result persisted at W3 and did not vary by gender or SES. Depressive symptoms and physical symptoms increased between W1 and W2 and remained elevated at W3. Increases were greater among females than males. No differences were evident by race. Sleep durations increased from W1 to W2 and remained elevated at W3. This increase did not differ across demographic groups. Sleep problems increased from W1 to W2, and remained elevated at W3. This increase was greater among females than males, and was greater among lower SES than higher SES White students. Overall, findings suggest sizable and enduring impacts of the pandemic on young adults with substantial variability across demographic groups.

**Mental health/function**

## Depression, Anxiety and Delayed Contraceptive Care among Community College Students

Cynthia Harper* Cynthia Harper Julia Steinberg Sarah Elmes Kristine Hopkins Stephanie de la Melena Audrey Sanchez Jennifer Yarger

Symptoms of mental distress have soared during the pandemic, especially among adolescents and young adults. Mental health distress may make it even more challenging for young people to seek other needed health care, including contraception. This study explored the association of symptoms of depression and anxiety and delays in getting a birth control method or prescription. We used baseline data (n=1,709) from an ongoing cluster randomized trial in Texas and California among a diverse, non-clinic-based sample of community college students ages 18-25 years. We measured the association of depression (CES-D) or anxiety (DASS-21) symptoms with delayed care-seeking with mixed effects multivariable regression for clustered data. We included variables important for access to care, including race/ethnicity, health insurance, state of residence, as well as age, sexual orientation, and pregnancy desire. We also included a variable to denote whether the participant was enrolled prior to the pandemic or during the pandemic. Thirty-one percent of students reported they delayed getting a contraceptive method they felt they needed in the past year. Multivariable regression results showed the association of symptoms of depression (acoef=1.06, p<0.001) and anxiety (acoef=1.06, p<0.001) with delayed care to be highly significant. All other model variables, including race/ethnicity, health insurance and whether data collection occurred during the pandemic, had no association with delays in getting a contraceptive method. These results based on a sample of students in an educational setting show the strong connection between experiencing both mental health distress and delayed care-seeking for contraception, which might not be evident in a clinic-based sample of individuals who have already presented for healthcare. Attention to mental health may impact a wide range of health needs, including contraceptive care, and outreach to youth in the community for essential health services is an important component of health equity.

**Mental Health Disparities Between Female Sexual Minority and Heterosexual Youth With Substance Use Disorders and Who Are Experiencing Homelessness** Allen Mallory\* Allen Mallory Jared Martin

Sexual minority (SM) youth are at greater risk of homelessness, substance use, and poor mental health compared to heterosexual youth due to unique stressors they face tied to societal stigma related to their sexual orientation. Although we know that SM youth are overrepresented among youth experiencing homelessness (YEH), we know less about if mental health disparities persist among this already vulnerable population, particularly for female SM YEH. Given the numerous challenges that YEH face, it would not be surprising to not find evidence of these disparities, but if there is, it has important implications for services providers who work with female SM YEH. The current study leverages baseline data from four randomized clinical trials (RCTs) of substance use interventions among YEH to assess if there are mental health disparities between female heterosexual and SM YEH with substance use disorders (SUDs). Utilizing meta-analytic techniques, we estimated average effect sizes across three outcomes from the baseline data of these four RCTs to assess if health disparities were present between female heterosexual and SM YEH. Effect sizes for continuous outcomes were calculated as mean differences between heterosexual and SM youth using Hedges $g$, and effect sizes for dichotomous outcomes were calculated using log odds for analysis which are reported as odds ratios ($OR$). Results indicated that female SM YEH had higher depression symptoms as measured by the Beck Depression Inventory for Youth II ($g$=0.20; $95\%CI$=0.01-0.39), higher odds of ever attempting suicide ($OR$=2.33; $95\%CI$=1.55-3.52), and a greater number of suicide attempts ($g$=0.31; $95\%CI$=0.09-0.54) compared to their heterosexual peers. These effect sizes were not moderated by age. Given the limited research on female SM YEH with SUDs, this study provides critical information regarding mental health disparities among YEH and for service providers working with female SM YEH.

**Social/relational factors**

**Daily Stress and Cognitive Functions in Midlife Same- and Different-Sex Marriages: The Moderating role of Dyadic Stress Coping** Yiwen Wang* Yiwen Wang

Same-sex couples experience a considerable amount of minority stress as a result of their socially stigmatized relationship status. However, little is known about same-sex couples' stress experience and cognitive performance at older ages as compared to different-sex couples. In this study, I use daily dyadic longitudinal data from the Health and Relationships Project (HARP) to explore the basic patterns of daily cognitive functioning (memory failures and unconstructive repetitive thinking) across couple types (e.g., men with men; men with women; women with men; and women with women). The primary focus of this study is to assess how daily stress—as reported by each spouse—is associated with cognitive function, and how these associations vary for women and men in same- and different-sex marriages. To examine how dyadic marital processes matter, I also test whether positive and negative dyadic stress coping buffers and amplifies the health impact of daily stressors on cognitive function.

**COVID-related Disruptions to School-based Social Connections and Child Mental Health in the Conditions Affecting Neurocognitive Development and Learning in Early Childhood (CANDLE) Study** Jessica Arizaga* Jessica Arizaga Courtney K. Blackwell Alexis Sullivan Nicole R. Bush Sheela Sathyanarayana Catherine J. Karr W. Alex Mason Kaja Z. LeWinn

To curb the spread of COVID-19, in-person learning was suspended in over 190 countries, disrupting typical social interactions occurring in the school context for millions of children. In early adolescence, a sensitive period of brain and social development, long disruptions to social connections in schools may have far reaching consequences for mental health. The present study examined the association between social interactions with peers and teachers during remote learning and changes in child mental health between a pre-pandemic study visit and one that took place during the pandemic (ages 8-9 and 10-11, respectively). The sample was a subset of children (n=221) and their mothers from the CANDLE pregnancy cohort in Memphis/Shelby County, Tennessee. Mothers completed surveys on their children's COVID-19 pandemic-related learning disruptions. Mental health was self-reported by children (via the Children's Depression Inventory 2 and the Screen for Child Anxiety Related Disorders). Within-person change scores for depression and anxiety were calculated by subtracting pre-pandemic from pandemic scores. In regression models adjusted for child age, sex, race, maternal education, and income, children who rarely/never had quality interactions with their peers during remote learning demonstrated increases in CDI (β=6.14; SE=2.7; p=0.02) and SCARED scores (β=7.29; SE=3.0; p=0.01) during the pandemic; estimated coefficients are equivalent to approximately half a standard deviation increase in change-scores. Though of smaller magnitude, similar associations were observed for quality interactions with teachers during remote learning. Results suggest a lack of quality social interactions during remote learning, particularly with peers, can negatively affect children's mental health. In the event of future suspensions of in-person learning, administrators should consider screening for social isolation and adopting strategies to increase social connectedness.

**Aging**

## Exploring the Association Between Discrimination and Cognitive Functioning in Older Adults

Heather Farmer* Heather Farmer Alexis Ambroise Amy Thierry Marina Armendariz Sydney Kirven

Cognitive functioning (e.g., memory, attention) declines with age, and is an important predictor of diagnosed dementia. However, less is known about how experiences in later life and perceptions of those events contribute to cognition. For example, while older adults may experience discrimination for various reasons, less is known about how both the frequency and attributions of discrimination are related to cognitive functioning. To address this gap, we use nationally representative data on 12,376 White, Black, and Hispanic adults aged 65 and older participating in the Health and Retirement Study (HRS) from 2006 to 2016.  Multilevel linear regression models included measures of (1) perceived everyday discrimination (e.g., receiving poorer service in stores or restaurants), (2) individual attributions (e.g., race, age) reported, and (3) total number of endorsed attributions (ranging from 0-8). Results showed that everyday discrimination ($b$=-0.28, $p$<.001), race-based discrimination ($b$=-0.25, $p$<.001), and number of attributions ($b$=-0.10, $p$<.001) were associated with worse cognitive functioning. The model simultaneously including measures of discrimination and all attributions indicated that beyond the reported frequency of discrimination, attributing discriminatory experiences to gender, age, or disability were associated with cognitive functioning. These results suggest that discrimination is harmful for cognitive health and that the perceived reasons for discrimination may have unique and negative implications for cognitive functioning among older adults. Additional research is needed to understand whether more frequent discrimination exposure in combination with specific attributions of these experiences may be differentially associated with cognition between and within sociodemographic groups of older adults.

**Aging**

## A Functional Form of the Association between Education and Dementia in the United States
Hyungmin Cha* Hyungmin Cha Mateo Farina Mark Hayward

A vast literature has documented the inverse association between educational attainment and U.S. dementia risk but given little attention to identifying the optimal functional form of the association. Using the 2000-2016 Health and Retirement Study for non-Hispanic White, non-Hispanic Black, and Hispanic adults aged 65 years and older, we evaluated 13 functional forms across race-gender-cohort subgroups to determine which form(s) best captured the association. Results revealed that the preferred functional form generally includes a step-change reduction in dementia risk upon attainment of a high school diploma, at which point dementia risk resumes a linear decline. In addition, although the best functional form is fairly consistent across older and younger cohorts, the comparison between younger and older cohort shows that people with lower educational attainment are increasingly at risk of getting dementia, while people with advanced education are increasingly less likely to experience dementia. The findings provide important clues for the theoretical development of explanatory mechanisms. An explanation for the selected functional form may require integrating a credentialist perspective to explain the step-change reduction in dementia risk upon attainment of a high school diploma, with a human capital perspective to explain the linear declines before and after a high school diploma.

**Caregiver Burden and Unmet Resource Needs Among Caregivers of People Living with Dementia** Jennfier Makelarski* Jennifer A. Makelarski Soo Borson Mellissa Grana Elbert Huang MariaDelSol De Ornelas Katherine Thompson Stacy T. Lindau

More than 16 million U.S. adults provide care to a family member or friend with dementia; many suffer from high caregiver burden. We describe use of, and unmet need for, caregiving-related community resources and evaluate associations between unmet resource needs and caregiver burden.

We used baseline data from an ongoing randomized trial evaluating the impact of CommunityRx-Caregiver, an IT-based, point-of-care intervention that provides personalized referrals for local health and caregiving-related resources to caregivers. Participants included caregivers of people with dementia enrolled at an urban medical center. Participants reported use of and unmet need for the following resources: financial assistance, respite care, home health care, mental health support, caregiver education and end-of-life care. Caregiver burden was assessed using the 12-item Zarit Burden Interview (range 0-48); those with scores <12 (the sample's median score) were compared to those with scores ≥12.

Caregivers (N=249) were predominantly female (75%) and non-Hispanic Black (80%); 57% had completed 4+ years of college and 66% had an annual household income of ≤$50,000. The mean caregiver burden score was 13.5 (SD: 8.9, range 0-41). The proportion of caregivers reporting use of each resource type ranged from 8% for financial assistance to 37% for home health care. Most caregivers (73%) had at least one unmet resource need; 46% had ≥2 needs. Among those not using a given resource type, the rate of unmet need was: caregiver education (71%), mental health support (45%), respite care (44%), home health care (41%), financial assistance (28%) and end of life care (23%). Higher caregiver burden was associated with needing respite care (55% vs 33%, p<0.01), mental health support (66% vs 25%, p<0.01) and caregiver education (81% vs 66%, p=0.03).

Interventions that connect caregivers of people with dementia to caregiving-related community resources are needed and may reduce caregiving burden.

**Unpacking the mechanisms of health inequities among community dwelling older adults with mobility disabilities: An investigation of the role of mobility devices and household barriers in residential relocation** Marielle Jensen-Battaglia* Marielle Jensen-Battaglia Christopher L. Seplaki Emily M. Agree

Most older adults prefer to age in place, but barriers in home environments may prevent this for those with mobility disabilities. Simple tools such as canes, walkers, and wheelchairs help people with limitations navigate—but are only useful in homes that are accessible. This study investigated whether older adults who use mobility devices were at greater risk for residential relocation at one year. The analytic sample included participants present in ≥2 consecutive rounds (1-9) of the National Health and Aging Trends Study. Participants reported in-home use of a cane, walker, wheelchair or scooter. Home barriers included steps, household layout, and bathroom accessibility features. We classified residential relocation as a change in permanent address in the following round (≈1 year). Generalized estimating equations with autoregressive correlation structure, Poisson distribution and log link were used to estimate adjusted risk ratios. Inverse probability weights were applied to correct for loss to follow up. Over up to 8 years, 8,744 unique participants contributed a mean of 5.25 (SD 2.27) rounds of follow up; 29% of these participants used a mobility device indoors in at least one round, and 20% relocated (1,805 moves). The majority of relocations (66%) were within the community, with the remainder (34%) to residential or long-term care settings. Controlling for demographic, economic, family, and health status characteristics, those who used mobility devices indoors had 1.25 times the relative risk of residential relocation a year later (95% CI 1.01, 1.55), and each additional home barrier was associated with a 6% increase in risk (RR 1.06 95% CI 1.01, 1.11). These results suggest a complex relationship between mobility device use and home environments. Given the aging of the population and lack of accessible housing stock in the United States, identifying groups at risk for unwanted relocation should be a priority for future research.

**Aging**

**Rural/Urban Differences in Unmet Needs for Mobility Limitations among Older Adults Aging in Place**

Carrie Henning-Smith* Carrie Henning-Smith Megan Lahr Hannah MacDougall John Mulcahy

**Background and Objectives:** Most older adults would prefer to age in place, and that is reflected in current policy and programmatic interventions to support that. However, rural older adults aging in place may face particular challenges related to housing quality, financial resources, underlying health status, and access to care and services. This study uses a nationally-representative survey of older adults aging in place to examine differences in unmet need for help with mobility limitations, an important indicator of whether older adults are appropriately supported in aging in place.

**Research Design and Methods:** Data for this study come from Round 9 of the National Health and Aging Trends Study (NHATS), a nationally-representative survey of Medicare beneficiaries. We limited our analyses to respondents who had not moved since baseline (average of 27 years in their homes; n=3,343). We conducted bivariate and multivariate analyses to detect rural/urban differences in unmet mobility needs (indoor, outdoor, total), adjusting for socio-demographics, health status, and housing characteristics.

**Results:** Rural older adults aging in place had poorer health and lower socio-economic status than urban older adults aging in place. They were also more likely to live in homes with entrance stairs. Living in a rural area was associated with higher odds of any unmet mobility need for older adults aging in place (adjusted odds ratio [AOR]: 1.64, p<0.05). The relationship between rurality and unmet needs for help with mobility limitations remained significant after adjusting for socio-demographic characteristics, housing characteristics, health, and functional status.

**Discussion and Implications:** Rural older adult aging in place have poorer health status, fewer financial resources, and less accessible housing; they also have greater unmet need for help with mobility limitations. Altogether, this study highlights several important gaps in supporting rural older adults aging in place.

**LGB-specific state-level policies are associated with improved prenatal care access for sexual minority women.** Bethany Everett* Bethany Everett

New research suggests that sexual minority women are more likely to report preterm and low birthweight infants than heterosexual women. One potential factor may contribute to these disparities is prenatal care use. Using the National Longitudinal Study of Adolescent to Adult Health, this study builds upon recent research that has demonstrated the impact of structural stigma on health and wellbeing by examining the impact of four LGB-specific state-level policies on sexual orientation disparities in accessing prenatal care in the first trimester.

Using pregnancy rosters and survey data, I created a data set that correctly time ordered the sexual identity reported prior to each pregnancy and LGB-policy environment (ranging from 0 protective policies to 4) prior to pregnancy. Women who identified as mostly heterosexual, bisexual, or gay/lesbian were coded as sexual minorities. The dependent variable captures whether, per pregnancy, a woman received prenatal care in the first trimester (1= yes; 0=no). The sample was restricted to live births to exclude pregnancies that resulted in miscarriage or termination in the first trimester. The final sample size was 7,773 births to 4,511 women. To account for multiple births to a single woman, we use multilevel logistic models and control for race/ethnicity, education, maternal age, relationship status, and childhood poverty. Model adjusts for Add Health's population weight.

Results show that as the number of LGB-protective policies increased, the odds of receiving prenatal care in the first trimester also increased for sexual minority women (OR= 1.79, p<.001). There was no effect of LGB policies on heterosexual women. Sensitivity analyses showed that the effect of LGB-policies on sexual minority women's prenatal care use was similar for each sexual minority identity.

**Structural factors**

**Philanthropic Efforts to Create a Culture of Health Through Bail Reform** Cynthia
Golembeski* Cynthia Golembeski Matthew Bakko

Despite a 16% decrease in jail populations from 2019, pandemic response and decarceration efforts
are inadequate, while racial inequity has likely increased. Structural racism in criminal legal systems
can adversely affect health through multiple pathways. Incarceration can result in jail-attributable
injury, illness, and death.

80% of people in Texas county jail who died after contracting COVID were not convicted of any
crimes. Pre-incarceration factors, including poverty, racism, substandard healthcare quality and
access, along with  jail exposure, compromise health and increase recidivism risks. Disproportionate
punishment and collateral penalties associated with cash bail are causes and consequences of
racism and administrative dysfunction. Many support bipartisan criminal legal reform efforts.

Nonstate interventions, including philanthropic reform efforts and community bail funds, seek
change. Foundations promote causes and support policy reforms. How have foundations been
drivers of pretrial detention and bail reform in mitigating causes and consequences of structural
racism? We examine foundations' roles and behaviors.

Philanthropic funding is key to services, programming, research, and policy efforts associated with
reform. Foundations' role as quasi-state actors in policy processes is largely hidden and poorly
conceptualized. Philanthropy's role as charitable agents (services/programming) or social innovation
agents (research/policy) around bail is unknown.

We use an explanatory sequential mixed methods design to analyze quantitative and qualitative
evidence of philanthropic actors' motivations and perceptions regarding pretrial reform strategies,
including bail funds, pretrial risk assessment, and abolition. Quantitative analysis of  20 years of
data elucidates the scope and strategies of pretrial reform efforts by funders. Key variables: bail
reform strategy type, grant description, and funding expenditure. Interview data analysis assesses
philanthropic actors' subjective motivations and perceptions in funding pretrial reform.

**Health equity**

**Structural barriers to health care and preterm birth odds for Black women** David Curtis*
David Curtis

Black women in the US have elevated preterm birth risk relative to Whites. Although residential segregation and economic inequities are established structural determinants, little research has examined the role of structural racism in health care. Black women confront a disproportionate share of barriers to accessing care, such as scarce financial resources, uninsurance, poor spatial access, and discrimination. This study seeks to fill a crucial gap – i.e., the existence of few area-level measures of structural racism in health care – by examining structural barriers to care as predictors of preterm birth among Black mothers.

The sample of 1.5 million live births come from national birth records for 2014 through 2017. Inclusion criteria are singleton birth to a US-born mother identifying as non-Hispanic Black, and residence in metropolitan statistical area with ≥100,000 population and a Black population of ≥10,000. Preterm birth is coded as: term, mild (34-36 wk), moderate (32-33), very (28-31), and extreme (22-27). Structural barriers to care, assessed at the county and state-level, include: uninsurance rates among Black adults; supply of Black physicians; share of Black residents in primary care shortage area; publicly funded contraceptive availability; and public health expenditures. Data sources include the American Community Survey 2013-2017; the Centers for Medicare and Medicaid Services; the Association of American Medical Colleges; and the Guttmacher Institute; among others. Birth-level covariates included infant sex, parity, insurance at delivery, maternal education, and marital status/paternity acknowledgment, while county-level covariates included urban-rural classifications, ethnic composition, Black poverty rate, and per capita physicians.

Using ordinal models with robust standard errors, higher uninsurance rates among Black adults, less availability of publicly funded contraceptives, and fewer public health expenditures were associated with higher preterm birth odds. For instance, a 10% lower insurance rate was associated with OR of 1.05, 95% CI: 1.02, 1.08. Mediation by maternal-level and area-level process variables will be examined. Results can help demonstrate the extent to which barriers to care account for elevated PTB for Black mothers.

**Chronic disease**

## Examining Multilevel Risk Factors and Perceived Discrimination as a Mediator of Cardiometabolic Comorbidities by Race/Ethnicity, Rurality, and Socioeconomic Status among U.S. Adults

LaToya O'Neal* LaToya O'Neal Lisa Scarton Biswadeep Dhar Ara Jo Serena Guo

**Background**: Physical comorbidities disproportionately affect health disparities populations. Identifying and understanding individual and structural level risk factors as well as mediators associated with comorbidities is critical for advancing health equity among rural, low-income, and racial/ethnic minority populations.

**Study Aims:** 1) To examine differences in the prevalence of and risk factors associated with cardiometabolic conditions and comorbidities among health disparities populations and 2) To examine the role of perceived discrimination as a meditator of comorbidities among health disparities populations.

**Methods**: Data for this analysis are from a cross-sectional study of 2,180 U.S. adults. Comorbidity status, whether participants self-reported diabetes, hypertension, and heart problems, was the primary outcome variable for this study. The primary independent and mediator variable was perceived discrimination. Additional covariates included health behaviors, perceived health status, confidence in health information seeking, healthcare access, and demographic variables.

**Results:** Preliminary analysis reveal that the prevalence of individual and structural risk factors varied significantly by race, ethnicity, and socioeconomic status. Univariate and multivariate logistic regression analysis demonstrated that comorbidity status was significantly associated with age, rural identity, inability to access care, employment status, health status, confidence obtaining health information, and discrimination (OR: 1.02, 95%CI: 1.00-1.05).

**Conclusion:** Identifying multilevel factors associated with physical comorbidities among health disparities populations may have implications for advancing health equity. Specifically, the ability to develop innovative solutions are contingent upon understanding how these risk factors contribute to health inequities.

**Density zoning laws and health disparities among metropolitan older adults** Kate Strully*
Kate Strully Tse-Chuan Yang

Residential zoning laws are important policies behind social determinants of health, e.g., affordable housing, segregation, and concentrated poverty. This ecological-level study of the 50 largest metro areas in the US tests how density zoning restrictions (DZ), which restrict allowable density for new residential construction and limit affordable housing, are associated with disparities in obesity, asthma, and depression. Measures of DZ are from the 2019 National Longitudinal Land Use Survey and disparities outcomes are from the 2020 Medicare Disparities Database. We run OLS models, adjusting for potential confounders, and test an instrumental variable strategy used by previous research examining effects of DZ on segregation. DZ, sometimes referred to as "snob laws" in media, increased during the last century as explicitly racist housing policies were outlawed and have been shown to increase segregation. However, we know of no studies of associations between DZ and health disparities.

**Structural factors**

**Structural Racism and Disadvantage in School Contexts and Depressive Symptoms in Adolescence: The Development and Validation of Indices for Use in the National Longitudinal Study of Adolescent to Adult Health** Jessica Polos* Jessica Polos Stephanie Koning Taylor Hargrove Kiarri Kershaw Thomas McDade

Racial discrimination is an important predictor of racial inequities in mental and physical health. In recent decades scholars have made progress conceptualizing structural and systemic forms of racism. Ecosocial and biosocial perspectives emphasizing the timing of socio-ecological contextual exposures suggest that measuring structural racism in the contexts most relevant at a particular developmental life stage may be important to understand its contribution to inequities in health over the life course. While studies have focused on developing broader-based geographical measures of structural forms of racism, such as county residential segregation or state-level structural racism indices, less work has focused on measuring structural racism in schools, which are important contexts in adolescent development.

We introduce a school-level structural racism index (SRI) and a school-level contextual disadvantage index (CDI) for use in the National Longitudinal Study of Adolescent to Adult Health. Our indices take the geometric mean of variables capturing student background characteristics and attitudes as well as school policies and characteristics. We validate the indices using linear regression to measure the independent and interactive associations among the SRI, the CDI, and depressive symptoms by race and gender in Wave I of the survey, when students are ages 12-20. We find that a higher CDI score is associated with a higher likelihood of severe depressive symptoms for girls compared to boys and for Black students compared to white students. While the SRI does not independently predict student depressive symptoms, when interacted with the CDI, it predicts a significant increase in severe depressive symptoms in Black girls in low disadvantage schools. These results suggest both structural processes that select students into schools and Black-white disadvantage within schools are important for understanding adolescent depressive symptoms.

**Persistent poverty area residence as a risk factor for unmet social needs among African American cancer survivors** Theresa Hastert* Theresa Hastert Julie Ruterbusch Hayley Thompson Jennifer Beebe-Dimmer Ann Schwartz

**Background:** Persistent area-level poverty may contribute to long-term social and economic disinvestment and fewer health promoting resources even compared with current area-level poverty. This may contribute to unmet social needs, which are associated with adverse health outcomes. This study examines associations between living in persistent (vs. current and low) poverty areas and prevalence of social needs among African American cancer survivors.

**Methods:** We utilized data from 3,650 participants in the Detroit Research on Cancer Survivors (ROCS) cohort. African American adults were invited to participate if they were ages 20-79 at diagnosis with breast, colorectal, lung, or prostate cancer since 1/1/13; or diagnosed with endometrial cancer (ages 20-79) or any other cancer (ages 20-49) since 1/1/16. Cases were identified through a population-based cancer registry. Area-level poverty and social needs were assessed at ROCS enrollment. Area-level poverty was categorized at the census tract level as persistent [>=20% of residents with incomes <federal poverty level (FPL) in every decennial census since 1980], current (>=20% <FPL in the most recent American Community Survey estimate), and low (<20% of residents <FPL). Participants self-reported social needs, including food insecurity, recent utility shut-offs, housing instability, inability to get medical care due to cost or lack of transportation, and whether they generally felt safe in their neighborhood.

**Results:** At ROCS enrollment, 34% of participants lived in persistent, 33% in current, and 33% in low poverty areas. Overall, 39% reported any social needs, and prevalence was higher in persistent (47%) relative to both current (41%; p=0.01) and low poverty areas (29%; p-trend <0.001). Food insecurity (16%) was the most common social need reported, followed by needing a doctor and not going due to cost (13%), housing instability (12%), needing a doctor and not going due to lack of transportation (11%), feeling unsafe in the home neighborhood (10%), and utility shut offs (9.4%). Prevalence of food insecurity, housing instability, needing a doctor and not going due to transportation, and utility shut-offs was highest in persistent poverty, followed by current and then low-poverty areas (all p-trend<0.001), but did not differ between persistent vs. current poverty areas. Prevalence of feeling unsafe in the home neighborhood was higher among residents of persistent vs. current poverty areas (16% vs. 10%; p<0.001), and among both compared with low-poverty areas (3%; p-trend<0.001). Area-level poverty was not associated with needing a doctor and not going due to cost.

**Conclusions:** Current and persistent area-level poverty were associated with prevalence of most social needs. Prevalence of any social needs was higher in persistent vs. current poverty areas. Long-term social disinvestment associated with persistent poverty may contribute to additional social needs beyond those in current poverty areas.

**Structural factors**

**Investigating homicide disparities through a spatial intersectionality lens** Mudia Uzzi*
Mudia Uzzi Shannon Whittaker

Intersectionality is a useful framework for conceptualizing how social positioning at the individual and structural levels intersect to produce health inequities. However, this framework has been underspecified in neighborhood-level research. A multitude of factors give rise to disparities in neighborhood outcomes such as homicide rates. Leveraging administrative and archival data from the US Census Bureau, the Baltimore Police Department, and the Mapping Inequality Project, we investigate how two factors related to structural racism, both historic (redlining) and contemporary (racialized economic segregation), intersect to produce spatial disparities of neighborhood-level homicide rates in Baltimore. After dichotomizing redlining and racialized economic segregation by level of advantage, both variables were combined across their axes to create four intersectional groups: dually advantaged, dually disadvantaged, recently advantaged and formerly advantaged. We then use measures of additive interaction to describe the intersectional relationship between redlining and racialized economic segregation on neighborhood-level homicide rates. We found that dually disadvantaged tracts had on average 12 more homicides a year per 10,000 residents compared to dually advantaged tracts. Furthermore, the intersection of redlining and racialized economic segregation results in an excess of around 7 homicides a year per 10,000 residents in dually disadvantaged tracts. Finally, we found that almost half (47%) of the homicide rates in dually disadvantaged tracts can be explained by the intersection of redlining and racialized economic segregation. These results suggest that the intersection of redlining and racialized economic segregation is a significant factor in producing homicide disparities in Baltimore. Implications from this research should encourage the development and implementation of violence prevention efforts using a racial justice and health equity lens.

**Structural factors**

## Incarceration and Psychiatric Emergency Department visits among Black Americans, 2006-2015 Abhery Das* Abhery Das

**Background:** The justice system incarcerates nearly 2.3 million individuals in the US. Black Americans comprise 40% of those incarcerated despite representing less than 15% of the population. Theoretical work posits that mass incarceration erodes social capital, as well as family networks within Black communities. Scholars report that greater incarceration may influence population-level health, such as sexually transmitted disease, birth outcomes, and mental health symptoms, specifically in communities of color. However, previous work does not address whether incarceration, as well as the racial disparity in incarceration, corresponds positively with psychiatric help-seeking in the Black community.

**Methods:** I examine the relation between annual prison incarceration and psychiatric Emergency Department (ED) visits among Black Americans. As the exposure, I use the prison population among Black Americans (per 100,000 population) and the ratio of Black American to non-Hispanic white prison populations. I examine, as the outcome, annual psychiatric, depression, and anxiety ED visits (per 100,000 population) among Black Americans in 404 counties from ten US states between 2006-2015 (2,398 county years). Linear fixed effects analyses controlled for time-invariant county-factors as well as percent below the federal poverty line, percent unemployed, number of hospitals, and arrests for violent crime.

**Results:** I find that prison population corresponds with a 1.1% increase in anxiety ED visits among Black Americans ($p<0.001$). I also find a positive relation between the racial disparity in prison populations (Black Americans: non-Hispanic white) and psychiatric (2.3%), depression (3.0%), and anxiety (3.0%) ED visits ($p<0.05$).

**Conclusion:** The racial disparity in incarceration may not only serve as an indicator of structural racism in the justice system, but also have broader health implications in communities of color. Researchers and policy makers may want to consider measures, such as drug reform, to reduce the influence of mass incarceration on mental health in the Black community.

**Race/Ethnicity**

**Internalized Colorism and Psychobiological Distress among Black Americans** Alexis Dennis*
Alexis Dennis Reed DeAngelis Taylor Hargrove Jay Pearson

While health inequities between Black and White Americans have been documented for over a century, less attention has been given to within-group health inequities among Black Americans. One promising line of research documents health inequities predicated on skin tone, revealing that lighter-skinned Black Americans often enjoy better health than their darker-skinned peers. Still, we know little about the biopsychosocial mechanisms generating such patterns. Addressing these gaps, our study tests hypotheses linking skin tone and psychobiological stress and aging among a community sample of working-age Black adults from Nashville, Tennessee (2011-2014; n = 627). We find that respondents who perceive themselves as darker-skinned have a lower sense of mattering and shorter telomeres, a biomarker of accelerated aging, relative to their peers who perceive their skin to be lighter. These inequities are attenuated, however, for respondents who report a positive racial self-concept. Moreover, these patterns apply only to respondent's self-rated skin tone and are not replicated with a measure of interviewer-rated skin tone. Taken together, our findings indicate that *internalized colorism* is a unique chronic stressor for Black Americans, the effects of which become embodied across multiple psychobiological systems and can be mitigated by positive attributions to Blackness. These findings are important for at least three reasons. First, they underscore the insidious nature and health consequences of anti-Black racism, particularly in the (southern) United States context. Second, they reveal an unrecognized stress pathway by which many ethnic Black-Americans could be suffering worse health (i.e., internalized colorism). Third, they highlight the agency and resilience of ethnic Black-Americans who are able to resist the internalization of anti-Black racism.

**Racial Disparities in Mortality During the 1918 Influenza Pandemic in United States Cities**

Elizabeth Wrigley-Field* Elizabeth Wrigley-Field Martin Eiermann James Feigenbaum Jonas Helgertz Elaine Hernandez Courtney Boen

The 1918 influenza pandemic stands out because of the unusual age pattern of high mortality. In the United States, another feature merits scientific scrutiny: against a historical backdrop of extreme racial health inequality, the pandemic produced strikingly small ratios of nonwhite to white influenza and pneumonia mortality. We provide the most complete account to date of these racial disparities in 1918, showing that, across U.S. cities, they were almost uniformly small. We examine four potential explanations for this unexpected result, including [1] socio-demographic factors like segregation, [2] city-level implementation of non-pharmaceutical interventions (NPIs), [3] exposure to the milder spring 1918 "herald wave," and [4] early-life exposures to other influenza strains resulting in differential immunological vulnerability to the 1918 flu. While we find little evidence for 1-3, we offer suggestive evidence that racial variation in early-life exposure to the 1889-1892 influenza pandemic shrunk racial disparities during the 1918 pandemic. We also raise the possibility that differential behavioral responses to the herald wave may have protected nonwhite urban populations. By providing a comprehensive description and careful examination of the potential drivers of racial inequality in mortality during the 1918 pandemic, our study provides a framework to consider interactions between the natural history of particular microbial agents and the social histories of the populations they infect.

**Structural factors**

**Implications Of Redlining Methods: A Systematic Review Of Adverse Outcomes** Janelle Edwards* Janelle Edwards Christian Ong Sharelle Barber Irene Headen Leah Schinasi

Background: Redlining refers to the systematic withholding of home mortgages from minoritized groups by the U.S. government in the late 1930s, spatially represented by color-coded maps created by the Homeowners Loan Corporation (HOLC). Recently, there has been a proliferation of research on links between redlining and modern-day spatial patterning of race-based environmental and health inequities. Authors have used a variety of measurement tools to understand these links; these varied methods have implications for representing racial trends within the context of dynamic urban history. Purpose: We conducted a systematic review describing links between historical redlining and present-day health and environmental inequities. Our goals were to document the methods used in the redlining research, and to make recommendations for future work. Methods: Following the Preferred Reporting Items for Systematic reviews and Meta-Analysis guidelines, literature searches were conducted in January 2022 from OVID MEDLINE and Web of Science using search terms that combined concepts of redlining, health, and neighborhood environment. Results: In total, 36 papers were included. Of these, 22 quantified links between redlining and health outcomes, including preterm birth and breast cancer; 9 quantified links with environmental exposures, including heat, greenspace, soil lead levels, or crime; and 5 with built environments, including presence of retail alcohol, fast food, or tobacco retailer stores. Of the articles included, 10 used data from the Home Mortgage Disclosure Act to create a redlining index, and 26 used HOLC maps. Of the studies that used HOLC maps, only 4 accounted for areas that were not originally included in HOLC maps but, at present, are urban spaces that may be subjected to racial residential segregation and disinvestment. Conclusions: Results from our review suggest the need for careful consideration of optimal methods to analyze historical redlining in urban settings.

**Gender**

## Men's knowledge of pregnancy, gender-equitable attitudes and involvement during pregnancy Francine Wood* Francine Wood

**Background**: Men are usually key decision-makers in some countries and control and decide on resources in the household. Research has shown that involving men in maternal health increases access to and use of maternal services and encourages more equitable decision-making and couple communication. Given its importance and the dearth of literature in the DRC, further research is needed. The objective was threefold: (1) examine male involvement patterns during pregnancy; (2) analyze the association between knowledge of pregnancy and birth preparedness (BP), gender-equitable attitudes, self-efficacy, co-parental relationship factors and involvement; and (3) explore the moderating effect of gender-equitable attitudes and violence.

**Methods**: Data from the Gates-funded Momentum baseline study was analyzed using multivariate regression to determine the predictors of involvement and interaction terms to explore moderation. Factor analysis was used to create male involvement indices ([1] antenatal care (ANC)/BP and [2] shared decisions) and the analysis consisted of 1,674 male partners of nulliparous women 6-months pregnant.

**Results**: Male involvement in pregnancy-related activities was low, ranging from 11% (finding a blood donor) to 49% (saving money during emergencies). Knowledge of the correct number of ANC visits, more than one BP step, and one newborn danger sign were associated with ANC/BP involvement, while knowledge of two or more ANC benefits was associated with shared decisions involvement. Increasing relationship satisfaction and self-efficacy were associated with ANC/BP involvement. A positive relationship with gender-equitable attitude and a negative relationship with self-efficacy were observed for shared decisions. Gender-equitable attitude had moderating effects for both forms of involvement, while sexual violence was a moderator for shared decisions.

**Conclusion**: There are various dimensions of male involvement and findings suggest that the factors influencing involvement vary depending on the type of involvement. Addressing these determinants can improve male participation in maternal health.

**Associations of Gendered Racial Discrimination and Psychosocial Stress in Black US Women: A Mixed Studies Systematic Review** Ashley Cooper* Ashley Cooper Camila Curtis-Contreras

Intro: This study presents a systematic mixed studies review examining associations of gendered racial discrimination and stereotypes and reports of psychosocial stress in Black US women. Methods: Searches for research studies were conducted using PubMed, CINAHL, Scopus, PsycINFO, OVID Medline, and Embase, without limit to publication year. A results-based convergent design was used for review. The Mixed Method Appraisal Tool was used to evaluate quality. Quantitative studies were synthesized narratively, and qualitative studies were synthesized using thematic synthesis. Inclusion criteria were original US based studies published in a scholarly journal with study populations including Black US women ages 18 and over. Quantitative studies included a measure of stress, and a measure of gendered racism or related concept, reporting at least one outcome of their relationship. Qualitative studies included a discrimination to stress framework and/or a focus on topics of stress.

Results: 95 full-text studies were assessed for eligibility and 11 studies met the criteria for analysis and inclusion in the review. Five qualitative and six quantitative were synthesized. Studies examined associations of experiences of gendered racism and stress for Black women. Prominent themes included respectability politics, network stress, upholding the positive gendered racial stereotype, and embodiment of stress. All quantitative studies demonstrated positive associations of gendered racism and stress.

Conclusion: Findings highlighted that gendered racism was a stressor for Black women in the US across age-groups, socioeconomic status, and domains via interpersonal experiences, as well as intrapersonal and community endorsement of gendered racial stereotypes. Implications: Attention to stress as an intermediary in this population has great potential to reduce disparities in stress-related conditions across body systems. Researchers, policy makers and clinicians may consider pre-disease associations of discrimination and stress as a priority for Black US women.

**Pandemic Retelling: What GoFundMe Posts Reveal about the Social Context of COVID-19 Deaths in Latinx & Spanish-speaking Communities in the U.S.** Alicia Riley* Alicia Riley

COVID-19 has had an outsized impact on Latinx immigrant communities in the US, turning thousands of individuals into newly-bereaved survivors. Despite an eagerness among scholars to document racial/ethnic inequities in COVID-19, data limitations prevent a deeper understanding of the social context of COVID-19 deaths. This mixed-methods study explores the social relationships, structural factors, and significant events that surround COVID-19 deaths among members of Latinx and Spanish-speaking communities in the U.S., as retold in user-written posts on the GoFundMe crowd-funding platform. GoFundMe posts for funeral and related expenses in the aftermath of a COVID-19 death are an unexplored source of information about COVID-19 decedents and their families, as well as the social impacts of COVID-19 mortality inequities. First, I use computational query methods to systematically identify a corpus of Spanish-language/bilingual GoFundMe posts from US locations referencing the death of someone to COVID-19. Then I use deductive and inductive coding to analyze the corpus and explore references to structural positionality (e.g. occupation, nativity, financial burdens), social network positionality (e.g., network members, household membership, breadwinner status), financial hardship, and grief surrounding COVID-19 deaths as well as the meaning-making and collective memory work practiced to honor deceased loved ones. This presentation will share descriptive quantitative results and themes and quotes that emerged from the qualitative analysis. While surveillance data and vital statistics data fail to capture how COVID-19 decedents belong to social networks and communities, this study leverages a novel data source in order to tell a more complete story about the social context of COVID-19 mortality inequities and pandemic grief in Latinx and Spanish-speaking communities.

**Social/relational factors**

**Fostering Inclusion and Belonging: Learning from Local Communities** Olivia Little* Olivia Little

A strong sense of inclusion and belonging within a community can improve the health and well-being of residents. The concepts of inclusion and belonging encompass feeling connected, supported, valued, and respected as a community member; being able to access public and private resources; and having the power and opportunities to lead and shape what happens in the community. These factors contribute to better overall population health outcomes and community resilience.

This presentation will provide qualitative evidence and implementation examples from local places to highlight *how* communities foster inclusion and belonging through intentional policy, systems, and environmental changes. Themes and examples are drawn from a qualitative study examining strategies to promote inclusion and belonging across 54 communities that won the Robert Wood Johnson Foundation (RWJF) Culture of Health Prize between 2013-2021. The Prize was awarded to U.S. communities working at the forefront of advancing health, opportunity, and equity for all. Winners demonstrated strengths across six qualitative assessment criteria, which included "fostering a sense of security, belonging, and trust."

From this analysis, the presentation will overview approaches for embedding inclusion and belonging into community values and practices, taking into account the unique histories and contexts of different places. Examples include publicly naming and addressing injustices; reclaiming and elevating cultural strategies; implementing trauma-informed and restorative approaches; promoting civic engagement and investing in resident leadership. The presentation will offer concrete ideas, strategies, and solutions that can inform and inspire others working to foster inclusion and belonging.

**Policy**

**Leveraging Medicaid to Enhance School Mental Health Services and Supports** Vinu Ilakkuvan* Vinu Ilakkuvan Anne De Biasi

Mental health issues among children are on the rise, and schools are a key access point to meet increasing demand for services and supports, from mental health promotion to screening to treatment for diagnoses. Interdisciplinary approaches spanning education, healthcare, and other sectors are essential to strengthening the school mental health system, but siloed and restrictive funding, barriers to information sharing, and other such obstacles prevent these approaches from being scaled and sustained. This study explores the types of mental health services and supports delivered in schools, the interdisciplinary partnerships and approaches involved in delivering them, and how these interventions are financed by Medicaid.

Expanding  on prior reviews and focusing specifically on Medicaid financing across tiers (i.e. promotion/prevention to screening to treatment),  a rubric has been developed to classify interventions in each school health tier, using specific examples of what is provided, or could be provided in the school setting.  Through a literature review, news scan, and expert interviews conducted in the first half of 2022, this study will describe how these services and supports are currently financed by Medicaid.  This will include both what is covered by Medicaid and how (i.e., what Medicaid payment methodologies are leveraged, such as school-based billing, fee-for-service Medicaid, prospective payment, waivers, etc.).

Barriers and facilitators to delivering school mental health (such as conflicting guidance between education and Medicaid authorities, licensing/scope of practice, siloed or restricted financing, school-health provider partnerships, privacy, etc.) will be summarized and policy recommendations to enhance interdisciplinary approaches to strengthen the school mental health system and increase Medicaid mental health services in schools will be made.

**Policy**

**Covering child care during COVID: analysis of local television news coverage of child care from March thru May of 2020** Margaret Tait* Margaret Tait

The COVID-19 global pandemic has laid bare the faults in the U.S. early care and education (ECE) system. By ECE, we are referring to, "..settings in which children are cared for and taught by people other than their parents or primary caregivers with whom they live,"  (Morrissey, 2019). Despite growing evidence of the relationship between ECE services and child and parental health and well-being, it remains a service that many struggle to afford or access. It is also one of variable quality, wherein what individuals and families can afford or access may require a compromise of quality. These issues of access, affordability, and quality have been exacerbated during the pandemic and make clear the need for policy reform.

It is well known that the media- through informing, interpreting, and contextualizing content – can shape the public's perceptions of population health policy issues, including for people who do not experience the ECE system directly—but may nonetheless vote or otherwise engage in policy (Baumgartner & Jones, 2009; Kingdon, 1984). While the public's trust in media has declined in recent years, local television news remains more trusted (Lopes et al., 2021).

Taken together, it is critically important to analyze the content of local tv news coverage related to ECE airing during the pandemic. This analysis is responsive to this need.  We reveal (1) the volume of ECE content discussing policy and that could signal the need for solutions to viewers and (2) describe the individuals or populations depicted as in need of support with child care and who could be prioritized in policy. We analyzed data, in the form of local television news stories airing on one of four major networks (ABC, NBC, CBS, or FOX) from March thru May of 2020, in 22 purposively selected markets in the U.S. Our results shed light on the extent that policy was proposed as a solution to ECE-related issues and adds to the evidence of why the current ECE policy response has been limited.

**Policy**

## The Affordable Care Act & Allostatic Load: Improved Health of Those Living in States with 2014 ACA Medicaid Expansion Anna Shetler* Anna Shetler

The Affordable Care Act (ACA) changed healthcare access in multiple ways in the US. Previous studies have found that insurance coverage, access to care, and use of preventive care all increased under ACA adoption. However, there have been mixed results for health. Previous work has focused on self-reported health, and so, I evaluate the ACA using allostatic load (AL)—a more objective measure of health.

Additionally, previous studies on the ACA have either been too large—using administrative data—or too small—only looking at individuals who received coverage. Through ACA expansion, states may inadvertently enhance the health of their entire population. Social network, eco-social, and social determinants of health theories predict improved population health despite different individual insurance access. I evaluate the AL of individuals living in ACA expansion states to determine if ACA has wider impacts on state populations.

I ask: do individuals living in states with ACA Medicaid expansions have lower AL than those living in non-ACA expansion states? Does merely living in an area where more people are able to access healthcare influence health? I use Add Health data to answer these questions. Using a sample of young adults is ideal, as participants at this age may be leaving their parents' health insurance for the first time: the ACA expansion may be especially salient for this population.

In estimating fixed-effects models, I find that young adults living in 2014 ACA Medicaid expansion states (n = 2,066) have improved AL over time compared to their peers living in non-ACA Medicaid expansion states (n = 1,676). I incorporate macro-level state factors (e.g., unemployment rates) as well as demographic characteristics, as AL is likely to increase at higher rates for certain groups (e.g., Black women).

While not without limitations, results from this study inform if state ACA adoptions may lead to decreased healthcare expenditures and improved livelihoods for young adults.

**The Impact of State-Level Policy Barriers on the Mental Health of Men with Criminal Records** Kaitlyn Berry* Kaitlyn Berry Rachel Widome

**Significance:** Nearly 1 in 3 US adults have a criminal record and are subject to legal restrictions, known as the collateral consequences of criminal conviction, that make it challenging to access employment, public benefits, and other resources. These barriers may exacerbate the mental health challenges of men with criminal records.

**Aim:** We assess the impact of collateral consequence policies on major depression among men with criminal records.

**Data:** We link individual-level data from the Fragile Families and Child Wellbeing Study with state-level policy information collected by the Legal Action Center in their 2009 "After Prison: Roadblocks to Reentry" report. Men are considered to have a criminal record if they report having ever been booked/charged, convicted, or incarcerated.

**Methods:** Among men with criminal records (n=979), we use mixed effects modified Poisson regression to estimate the risk of major depression for men who live in restrictive policy states compared to men who live in permissive policy states. We consider severity of collateral consequence policies overall and within seven policy domains (employment; public assistance and food stamps; voting; access to criminal records; public housing; drivers' licenses; adoptive and foster parenting). Models include a random effect for state and adjust for age, race/ethnicity, marital status, and education.

**Preliminary Results:** Men with criminal records who live in states with more restrictive collateral consequence policies do not appear to have excess risk of major depression (RR: 0.87, 95% CI: 0.70 to 1.07) compared with those who live in states with less restrictive policies overall. We see a similar pattern of null effects across policy domains.

**Next Steps:** To account for confounding by state differences, we are in the process of incorporating state-level control variables such as state incarceration rates, poverty rates, and political context from the Correlates of State Policy Project database.

**Policy**

**The Effect of Policy Overlap on Migrant Health: A European Cross-National Examination, 2010-2018** Zachary Franzoni* Zachary Franzoni Daniel Adkins

European health scholars have recently shown increasing interest in the effects of non-health policy domains on migrant health outcomes. Although existing frameworks theorize the influence of state-level institutional arrangements on population health, there is a paucity of empirical evidence to support these claims. The aim of this study is to examine the effects of one of these mechanisms, policy overlap, on the distribution of self-assessed health across migrant status and gender. By using a pooled European Social Survey (2010-2018) sample and data from the Migrant Integration Policy Index (MIPEX), this study measures the effects of two policy domain factors – Labor Market-Education (LME) and Anti-Discrimination-Citizenship (ADC) on health disparities. Results suggest that increased levels of ADC policy diminish the health disparities experienced by both new and established migrant groups. Conversely, increases in LME policy amplify health disparities experienced by new migrant women. Results also suggest that greater state-level political commitment to migrant incorporation reduces health disparities across migrant status and gender.

**Health care/services**

**Does the PCMH Increase the Rate of Preventive Service Use among Rural Women Aged 50-65?** Bobbie Johannes* Bobbie Johannes

The USPSTF recommends women between the ages of 50 and 65 receive 6 preventive services: cervical, breast (mammogram & clinical exam), and colorectal cancer screening, high blood pressure screening, and a flu vaccine. Rural women are often diagnosed with disease at a later stage than urban women due to a lack of these preventive services. The patient-centered medical home (PCMH) is a model of primary care delivery that may improve rural women's receipt of preventive care by providing comprehensive and coordinated care.

We test the hypothesis that the rural women receiving their usual source of care (USC) from a PCMH will have a higher rate of preventive service use compared to non-PCMH patients. Poisson regression models that control for the confounding effects theorized by the Andersen Model of Healthcare Utilization, including predisposing, enabling, and need characteristics are estimated. Data are from the 2015-16 Medical Expenditure Panel Survey (MEPS) and the sample is limited to rural females between 50-65 with a USC. Stata's survey procedure is used to account for weights and the complex sampling design of MEPS.

We estimate that the rate of preventive service is marginally larger among rural PCMH patients in the simple, predisposing, personal enabling, community enabling, and practice enabling models, however these rates are not significant. The need characteristics model is significant and suggests the rate of preventive service use is 0.76 times smaller among PCMH patients. Several significant confounders are worth noting such as, private insurance (IRR=1.49, p<0.000), race concordance among Black patients and providers (IRR=1.35, p<0.000), increasing rurality (IRR=0.33, p=0.001), Medicaid expansion through an 1115 waiver (IRR=0.70, p=0.001), and more than 1 practice location (IRR=0.77, p=0.017).

In conclusion, rural women receiving their USC from a PCMH do not have a higher rate of preventive service use compared to a non-PCMH.

**Spatial Analysis of Emergency Medical Services by Entity Types and Mortality in Texas**

Megumi Tanabe* Megumi Tanabe

**Introduction:** Emergency Medical Services (EMS) is one of the most impactful systems that prevents death. EMS is often used to measure medical accessibility, and the Texas Department of State Health Services (DSHS) has an interactive map on their website to show the EMS coverage in the state. "Healthcare desert" and "medical desert" are recently coined terms to describe areas with limited access to healthcare or medical care (Dosen et. al., 2017; Lucas-Gabrielli and Chevillard, 2018). Rural areas in the US are often affected by the lack of medical facilities within a 30-minute drive (Dosen et al., 2017; Hollar, 2016; Lucas-Gabrielli and Chevillard, 2018; McCarthy et al., 2020). While the spatial distribution of medical services in general, such as clinics and specialized hospitals in relation to mortality are common topics in public health, the spatial distribution of EMS is rarely analyzed from a sociological perspective. In addition, much research focuses on the availability of EMS in a given area instead of analyzing the distribution of different types of EMS providers.

The US fosters a complicated hospital funding system where hospitals can be run by both private and public domains, which potentially creates another hurdle for patients. Past research reveals that for-profit hospitals tend to offer more profitable procedures (e.g., open-heart surgery) and less of less-profitable services (e.g., psychiatric emergency) compared to government-owned hospitals, especially in areas with many hospitals (Horwitz 2005; Horwitz and Nichols, 2009). EMS is not profitable compared to other types of medical services; however, the percentage of for-profit owned EMSs is higher than other types of hospitals. Patients, especially without health insurance, tend to prefer non-profit emergency departments (ED) over for-profit EDs. Moreover, they find that ED visits and inpatient hospital admissions decrease when people lose health insurance. Healthcare accessibility is not only about physical distances from a hospital, but also about people's finances and perceptions of different types of medical facilities (Anderson et al. 2012).

Although it is evident that medical deserts have a significant impact on people, especially in the rural areas and those who are financially disadvantaged, not much research has been conducted to capture the relationship between the availability of non-specialized medical facilities and its impact on health outcomes on the state level. Past research assessing health outcomes often only focuses on hospitals with specialized equipment and treatments instead of medical facilities that serve a large population. Research with geospatial analysis of general medical facilities tends to simply report the physical distance of hospitals and do not analyze the demographic characteristics or the health outcomes between areas with sufficient medical facilities and medical deserts.

In this project, I investigate the relationship between the distribution of different entity types of EMS providers, race/ethnic composition, socioeconomic status, and health outcomes in Texas. Based on the previous research and the Texas EMS/Trauma Systems Interactive Map, I attempt to answer three research questions: (1) Are there any patterns to EMS distribution by entity type in Texas? (2) Are there any relationships between demographic characteristics and EMS distribution and entity type? And (3) Are there any relationships between EMS distribution and health outcomes?

**Data/Methods:** Texas EMS data is publicly available on the Texas DSHS website. The EMS provider roaster provides up-to-date information on all EMS providers with a valid EMS license as of November 2021. The EMS entity type is defined by Texas DSHS. Types of the entity include private for-profit, city fire department, city 3rd services, hospital, nonprofit, and volunteer. The x-y

coordinates for all EMS providers were made available by Texas DSHS. Socioeconomic status is measured by the percentage of poverty and the percentage of the uninsured population. The demographic data was obtained through US Census. Health outcome is measured by the percentage of people who reported poor or fair health and mortality rate by injury and stroke. Self-reported health data come from County Health Rankings and Roadmaps, and the mortality data is from CDC WONDER. Age-adjusted measurements are used for mortality to account for demographic differences. All mappings were done on ArcMap GIS software version 10.8.1. so far. I aim to investigate spatial correlation and run spatial regression analysis to uncover the relationships between EMS entity type, location, demographic characteristics, and health outcomes.

**Preliminary Findings:** There are 803 EMS providers in Texas. The most common entity type is private for-profit (40.97%), followed by the city fire department (17.81%), and not-for-profit (12.95%). From a visual inspection, for-profit and city fire EMSs are clustered in large cities such as Houston and Dallas. In addition, there seems to be a strong negative correlation between the distribution of EMS and the number of the Hispanic population, the percentage of the unemployed population, and the percentage of the uninsured population. There are substantially fewer EMS near the US-Mexico border, where there are many Hispanic populations compared to the East side of Texas where there are fewer Hispanics. There are significantly fewer EMS providers funded by hospitals and city fire in the border area. EMS providers funded by the city fire departments or for-profit organizations are clustered in large cities. The Black population in Texas is concentrated on the East side of Texas, and there is no significant relationship observed between the population distribution and EMS patterns.

Counties with a high percentage of the uninsured or unemployed population have fewer EMS providers compared to counties with less uninsured or unemployed population. Counties close to the US-Mexico border tend to have more economically disadvantaged populations than other parts of the state. EMS providers associated with hospitals, city fire departments, and for-profit organizations tend to be located in places with relatively low percentages of uninsured and unemployed populations. This finding is consistent with the previous research about medical accessibility and socioeconomic status.

Counties with fewer EMS providers seem to have higher self-reported poor health, especially near the US-Mexico border, compared to counties with many EMS providers. Mortality also seems to have a negative correlation with the number of EMS providers in the county from a visual inspection. Many rural counties in East and North Texas tend to have a high mortality rate by injury and stroke. Large cities such as Austin, Dallas-Fort Worth, Houston, and San Antonio have relatively low mortality by both injury and stroke, and those cities have a cluster of EMS providers except for Austin. Further research with advanced statistical analysis is required to confirm these findings.

**Health care/services**

**Stigma versus Need: The Relationship between Body Weight and Annual Primary Healthcare Visits** Lauren Newmyer* Lauren Newmyer Michelle L. Frisco

Obesity is a chronic disease that raises the risk for health problems, but it is highly stigmatized in healthcare settings. The juxtaposition of increased health risks and stigmatization by medical professionals raises an empirical question about whether obese adults are more or less likely visit primary healthcare providers than leaner adults. We answer this question by investigating how obesity is related to annual visits with two of the most common primary care providers in the U.S.—general physicians and obstetric/gynecologists. Analysis of data from 250,883 National Health Interview Survey (2010-2018) participants finds that obesity and overweight are positively associated with annual physician visits among both men and women, but obesity is negatively associated with women's gynecological visits. Results have important implications for understanding whether obese adults' primary healthcare needs are being met.

**Health care/services**

## Pathways to the Profession: Gender, Nativity, and Country of Medical Education Disparities in Selection into U.S. Medical Practice <span>Rebecca Anna Schut* Rebecca Anna Schut</span>

There is revived interest in understanding the ways inequalities are produced in the U.S. medical profession, particularly across the lines of gender, nativity, and country of medical education. However, little is known about what inequalities might be occurring *before* medical graduates matriculate into medical practice. Specifically, it is critical to interrogate how structural sexism and nativism might generate gender, nativity, and country of medical education disparities in determining who becomes a practicing physician in the first place, and what this might mean for the reproduction of inequality in medicine. Moreover, the extent to which medical graduates *do not* select into medical practice is vital to interrogate as the U.S. faces an increasing shortage of physicians in the coming decades, a crisis that threatens the health of the U.S. population. In this study, I use longitudinal data drawn from the 2003-2013 National Survey of College Graduates to explore disparities in the selection of medical graduates into U.S. medical practice across the lines of gender, nativity, and country of medical education. Examining the outcomes of 3,957 medical graduates living in the United States, preliminary descriptive findings indicate that there are salient disparities in *which* groups of medical graduates are more likely to select into U.S. medical practice, with women, immigrant, and foreign trained medical graduates being less likely than men, U.S. native, and U.S. trained medical graduates to currently practice as physicians. Subsequent analyses will use random and fixed effects models, alongside decomposition analyses, to examine whether gender, nativity, and country of medical education have become increasingly relevant factors over time in determining who becomes a practicing physician, and whether and what demographic, socioeconomic, and family status characteristics might be relevant for contributing to disparities in occupational outcomes among medical graduates in the United States.

**Health equity**

**The effects of maternal health narratives on public beliefs about the causes for racial health inequities and public support for social policies** Hawi Teizazu* Hawi Teizazu

Background: A perennial problem for groups promoting social and structural health interventions is the lack of public support for social policies. Support is particularly low for social policies to ameliorate racial inequalities. Health communication scholarship has identified narratives, or personal stories, as a way to effectively communicate information about social determinants of health, and promote support for structural interventions.  Although research has identified resistance to messages about racial inequity, no study to date has examined the use of narratives to communicate information about the social and structural causes of racial health inequities, or understand how narratives affect policy support.

Objective: This study sought to test the effects of narratives participants' beliefs about the causes of racial disparities in maternal mortality, and their support for social policies. A secondary aim was to understand the groups for whom narratives were most effective, and determine if narrative effects were mediated by participants' identification with the characters in the narrative.

Methods:  We conducted a web-based survey experiment using a sample of participants from an online panel. Participants were randomly assigned to read either a narrative or nonnarrative article about maternal mortality. Articles were developed with subject matter experts (e.g., birthing people, medical professionals, doulas). Both articles attributed maternal mortality to two external causes: distance from care facilities and racial bias in hospitals.  Participants then answered questions assessing their agreement with different causes for racial disparities in maternal health, and their support for social policies to improve maternal health in the United States. Participants in the narrative condition responded to questions assessing the extent to which they identified with the main character.

Results: Data from the pilot study (n=160)  show that the narrative condition increased agreement with external explanations for racial disparities, and increased support for social policies. This relationship was strongest among nonwhite participants. Additionally, nonwhite female participants were more likely to identify with the main character in the narrative.

**Migration**

**The role of political ideology on immigrant preferences and welfare access** Cesar Vargas Nunez* Cesar Vargas Nunez

To what extent does a shared political ideology shape attitudes towards immigrants? While past scholarship has concluded the American public prefers immigrants with certain characteristics – such as highly educated individuals – little research has explored the role of immigrants' political ideology on these attitudes. This project investigates to what extent a shared political ideology can influence Americans' attitudes towards immigrants and willingness to admit them. In a set of pre-registered survey and a conjoint experiments, I asked respondents to put themselves in the shoes of an immigration officer tasked with deciding which immigrants are worthy of admission into the country. The results show there is a premium given to immigrants who shared respondents' political ideology. This premium, at times, even superseded objective aptitude measures, such as education, profession, and work history. This effect remained present when assessing deservingness for government welfare programs, but the effect dissipates when deciding access to government healthcare programs. These results suggest that while preferences for immigration and welfare remain shaped by political ideals, healthcare maintains a special place in the social consciousness. This project contributes to our understanding of political ideology, polarization, and attitudes towards immigrants and immigration.

**Health equity**

## Building Consensus on Calls to "Defund the Police" Among Key Stakeholders in U.S. Cities

Daniel Schober* Daniel Schober Amanda Barry Michael Harley

Police use of force disproportionately affects Black men in the United States and this affects the health status of the entire population. In May of 2020, George Floyd was killed by a Minneapolis police officer which spurred national protests and calls to "defund the police." Consensus on the meaning of defund the police is important as localities, states, and the U.S. federal government respond to these calls, legislatively. The purpose of this study was to examine calls to defund the police and develop a consensus on its meaning. To do this, we analyzed articles from newspapers across the three largest U.S. cities. We examined 132 excerpts across 40 articles that were published within 30 days of Floyd's death. We focused our analysis on the perspectives of three stakeholder groups – state and local leaders, community stakeholders, and school stakeholders. The results of this analysis show that defund the police means three things: 1. Reduce police presence in communities and schools, 2. Re-direct police funding towards health services, mental health services, education, and career services, and 3. Change policies and systems to reduce the harms of police use of force and re-envision public safety. The results of this study may inform city and state action to alter police budgets and police responsibility. We explore the potential implications of these changes on population health and health equity.

**Interventions/Programs**

**Persuasion Nation? U.S. Overreliance on Educational Strategies to Promote Population Health** Mark Wolfson* Mark Wolfson

Persuasion is at the core of prevention efforts in the United States.  Mass media and social media health promotion campaigns; school-based curricula focused on prevention of alcohol, tobacco, and drug use and violence; product warning labels; and brief interventions by health-care workers have proliferated.  I examine prevention efforts focused on six population health issues–traffic safety, tobacco use, drug use, alcohol use, HIV/AIDS, and obesity—to understand the extent to which persuasion, rather than other strategies (such as product regulation, taxation, and restrictions on availability of dangerous products), is emphasized.  I argue that public health globally over-relies on strategies rooted in persuasion and education, and that this emphasis is particularly pronounced in the U.S.  Moreover, the priority afforded to persuasive strategies may exacerbate health disparities.  I examine four categories of explanation for overreliance on persuasion:  cultural preference, policymaker preference, preferences of industries that could be affected by regulation, and financial interests of the advertising industry.  I conclude by offering suggestions for development of research and policy agendas to correct over-reliance on persuasion in public and population health.

**Dietary behavior during COVID-19 restrictions: an analysis of food purchase patterns in North Carolina** Aline D'Angelo Campos* Aline D'Angelo Campos Shuwen Ng

Purpose:

Evidence suggests that restrictions implemented around the world to contain the spread of COVID-19 affected dietary behavior, and there is special concern about how they may exacerbate diet-related health inequities. This study examines the effects of the state of North Carolina's COVID-19 restrictions on purchases of healthy and unhealthy foods.

Methods:

We used shopper-month-level purchase data from a major NC grocery chain between October 2019-December 2020. With an interrupted time series design, we analyzed purchases of "junk foods" (snacks, candy, desserts, processed meats, sugary drinks) and fruits, vegetables, legumes and nuts (FVLN), stratified based on the NC Department of Commerce's county distress tiers.

Findings:

Following the implementation of the stay-at-home order in March 2020, we found a discontinuity in junk food purchases of ~4,200 kcal (p<0.01). Junk food purchases increased until the end of the order in May and then declined until November, and we did not find discontinuity differences between counties in different distress tiers during the order. For FVLN, we found a discontinuity of ~1,200 kcal in March (p<0.01), followed by a decline until July. The March increase was ~240 kcal higher among shoppers in counties in the lowest distress tier compared to the highest tier (p<0.01), but this difference disappeared over the following months. None of the fluctuations observed represented nutritionally meaningful discontinuities in the share of calories purchased from junk foods or FVLN.

Conclusions:

Changes in the share of store-bought junk foods or FVLN do not explain dietary outcomes observed during COVID-19 restrictions in NC. Government efforts to mitigate the effects of such restrictions on vulnerable populations may help explain the small differences between distress tiers, so we will expand our analysis to control for shopper participation in food assistance programs (SNAP/WIC). Future work should explore the role of programmatic responses.

**Results of an intervention to improve self-efficacy in vaccine conversations among Wisconsin early care and education providers** Amanda Simanek* Malia Jones

The WHO has identified an "infodemic" co-occurring with the COVID-19 pandemic, marked by an overwhelming amount of pandemic-related information. This, coupled with political polarization about COVID-19 vaccines has fueled increased vaccine hesitancy. Early care and education providers (ECEPs) are among parents' most trusted sources of information when it comes to their children's health, exceeded only by nurses and pediatricians. To address vaccine hesitancy among parents, we designed an intervention informed by social cognitive theory. We aimed to improve self-efficacy and positive outcome expectations related to vaccine conversations that ECEPs have with parents. We enrolled 49 pro-vaccine ECEPs in a 4-hour workshop focused on the role of trust in communication, the role of ECEPs as trusted sources of information, key skills for having one-on-one conversations about vaccines, and how to identify reliable vaccine information online. Participants were offered a cash incentive and continuing education credit for their participation in the workshop. We conducted a pre- and post-workshop survey to evaluate change in ECEPs self-efficacy and positive outcome expectations related to vaccine conversations with parents. ITT analysis (pre-workshop n=49; post-workshop n=31) showed statistically significant gains in both self-efficacy and positive outcome expectations. Self-efficacy to engage in vaccine conversations with parents improved by 24% over baseline overall, and positive outcome expectations improved by 23% over baseline. Some individual measures showed improvement by >50%. For example, participant ratings on the item "I find it difficult to explain to other adults why vaccines are important" improved by 55% after training; and ratings on the item "When someone tells me they aren't vaccinated for COVID-19, I don't know what to say" improved 53% over baseline. Our findings support the hypothesis that ECEPs can become vaccine advocates with only a little training.

**THE EFFECTS OF UNIVERSAL CASH-TRANSFERS ON BREASTFEEDING INITIATION AND CONTINUATION** Sarah Cowan* Anna Zamora-Kapoor Mariana Amorim Erica Hobby Kathy Perham-Hester Sarah Cowan

Background: Breastfeeding is a desirable behavior for medical, social, and cultural reasons. Yet, the challenges that post-partum women experience when trying to breastfeed are not well understood. Previous studies explain breastfeeding cessation with medical reasons, substance use habits, or women's desire to go back to work. However, there is limited knowledge about the potential association between universal cash transfers, such as the Alaska Permanent Dividend Fund, and breastfeeding decisions.

Objective: To analyze the association between the Alaska Permanent Dividend Fund and breastfeeding decisions among Alaska mothers.

Method: we used logistic regressions and data from the Pregnancy Risk Assessment Monitoring System and the Alaska Permanent Dividend Fund between 1995 and 2015. Our final sample included 14,591 post-partum women. Breastfeeding outcomes were measured with three variables: ever breastfeed, breastfed for 4 weeks post-partum, and breastfed for three months post-partum.

Results: Post-partum women that gave birth in October and November, the months after the receipt of the Alaska Permanent Dividend Fund, were more likely to initiate and continue breastfeeding for 4 weeks post-partum than those that gave birth in other months of the year. After stratifying our sample by socio-economic status, we observed that the positive effect of the Alaska Permanent Dividend Fund on breastfeeding outcomes was larger among low-income women and women participating in the Supplemental Nutrition Program for Women Infants and Children (WIC) than among their wealthier peers.

Conclusions: The Alaska Permanent Dividend Fund is positively associated with women's decision to initiate and continue breastfeeding for up to 4 weeks post-partum. Future efforts aimed at increasing breastfeeding initiation and continuation should consider the positive contribution of universal cash transfers, especially for low-income families.

**Los Inmigrantes También Comen: A Qualitative Photovoice Exploration of Survival and Coping Strategies Among Undocumented Latinx Immigrants in Texas During the COVID-19 pandemic** Marcela Nava* Marcela Nava Alane Celeste-Villalvir Georgianna Goff

**Background.** Texas was a major epicenter of the COVID-19 pandemic. Latinx Texans, 61% of whom are uninsured, represent 40% of cases and 56% of deaths. 1.6 million Latinx Texans are undocumented and ineligible for pandemic relief and public healthcare. Little is known about how vulnerable communities respond to COVID-19 related stressors. This study explores survival and coping strategies of Latinx immigrants and their families and contexts of immigrant-serving organizations that foster social capital for health promotion.

**Methods.** In partnership with two community-based organizations in Dallas-Fort Worth and Houston, Texas, this qualitative study used Photovoice, a participatory visual methodology, to document and explore participant experiences through photographs and focus groups. Audio-recorded focus groups were transcribed, coded, and salient themes identified.

**Findings.** Participants (N=28) identified as Hispanic/Latinx and equal proportions (50%) identified as men or women. Over 60% had a high school education or less, and over 80% reported annual income below $25,000. Participants were uninsured (18%) or accessed limited medical care and health resources through local financial assistance programs (43%). A quarter of participants reported a previous diagnosis of COVID-19. Throughout the pandemic, immigrants leverage mutual aid systems to overcome structural vulnerabilities such as pandemic relief ineligibility. To minimize risk of exposure and cope with the pandemic, participants relied on safe physical and organizational spaces, hobbies and distractions, and social networks.

**Conclusions.** In partnership with community organizations, public agencies can reduce administrative and linguistic barriers and promote access to pandemic relief resources in immigrant communities. Community organizations can leverage resources and existing partnerships to facilitate access to mental health programming and engage in collective fundraising to respond to the COVID-19 pandemic.

**Policy**

### Serving the public? Content analysis of public service announcements (PSAs) about COVID-19 airing in 2020.
Margaret Tait* Margaret Tait

Experts in health communication suggest that transparent, coordinated, and responsive communication from government is a key component of a successful public health response to the COVID-19 pandemic. Communication also has the potential to promote public understanding of health equity and the need for policies that guarantee resources to communities most affected by the virus. However, commentators have noted that the public health information environment throughout the pandemic has been less than optimal, rife with conflicting and polarizing messages that could threaten to dissuade individuals from behaviors that are key to mitigating the virus's negative consequences and diminish trust in agencies intending to promote the public's health.  The objective of this research was to examine the population health messages conveyed in public service announcements (PSAs) affiliated with the U.S. federal government response to the COVID-19 pandemic in 2020. To do so, we conducted a content analysis of 132 federally-affiliated PSAs that were aired 170,820 times between March 12 and December 16, 2020. Using a quantitative coding instrument, we analyzed health behavioral guidance, messages about groups, people depicted, and other PSA features. We calculated frequencies of exposure to messages at the airing-level to account for the varying number of times each PSA was aired. Far more PSAs aired between March and June than between July and December. The most common health guidance was to stay at home (80.7%), practice social distancing (61.9%), and wash hands (54.5%); 36.1% of airings included guidance to wear masks. Few PSAs referenced group differences in risk of infection or transmission, nor did they reference scientific evidence or the future availability of vaccines. PSAs aired in 2020 missed opportunities to convey important population health information to the public and to center health equity in public communication.

**Relationship Between Child Well-Being and Structural Racism at the County Level**

Nathaniel Anderson* Nathaniel Anderson Frederick Zimmerman

Objective

Child well-being is a key consideration of population health. In the absence of nationally representative subjective data from children, many researchers have developed indices that aggregate objective indicators across various aspects of children's lives. This analysis assesses whether structural racism is associated with worse performance on one of these indices at the county-level.

Study Design

We compile data for all U.S counties except Alaska from 2009-2018, and aggregate this information into an index score using a previously established methodology. Several proxies of structural racism (segregation, disparities in child poverty, and disparities in family education) are regressed against the index independently and jointly. We control for sociodemographic factors, state fixed effects, and state-specific trends.

Results

When examining structural racism variables independently, each measure is significantly associated with lower levels of child well-being. Standard deviation increases in the Black-white and the Latinx-white poverty gap are associated with  –0.067 standard deviation (95% CI –0.050 – –0.085) and –0.071 standard deviation (95% CI – 0.052 – –0.090) changes in well-being, respectively. When estimating the joint relationship with all structural racism measures, the disparity in college attainment between white and Latinx families has the largest negative association with child well-being followed by the disparities in Latinx-white and Black-white poverty.

Conclusions

Structural racism is related to lower levels of child well-being. When examining multiple forms of structural racism in the same model, nearly each of these measures has an independent association with lower levels of child well-being. As part of promoting child well-being, policymakers must commit themselves to addressing structural racism. The results here align with prior work indicating that a comprehensive strategy is required to make progress in child population health.

## The Health Consequences of U.S. Criminal Justice Contact: The Role of Race and Ethnicity

Michael Niño* MIchael Niño Casey Harris Alexia Angton

A growing body of literature has focused on the broad physical and mental health consequences associated with contact with the U.S. criminal justice system. Due to data limitations, however, most focus on arrests, convictions, and/or incarceration, often in isolation, and overlook other important types of criminal justice contact, such as probation. Exposure to the U.S. criminal legal system and access to resources that shape the risk of exposure is also unevenly distributed across racial and ethnic lines, yet few studies utilize analytic frameworks that account for these inequities. Using data from the National Longitudinal Study of Adolescent to Adult Health, we address these gaps by examining the associations between five types of criminal justice contact (i.e., arrest, conviction, probation only, incarceration only, probation and incarceration) and a series of physical, physiological, and mental health outcomes using a within race-ethnicity framework. Findings revealed that some types of criminal justice contact negatively shaped the physical, physiological, and mental health of Black Americans, whereas, for Latina/os, contact with the U.S. criminal legal system was not associated with the health outcomes under investigation. We only find minor evidence some types of contact significantly shape physical and mental health patterns among White Americans. Findings from this study provide new insights into the complex relationships between the U.S. criminal legal system, race and racism, and health.

**Mortality**

### The COVID-19 Pandemic and Race/Ethnic Variation in U.S. States' Life Expectancy Declines in 2020 Iliya Gutin* Iliya Gutin Ryan Masters

In 2020, life expectancy in the United States declined by about two years. The declines in U.S. male and female life expectancy far exceeded the 2020 declines in other high-income countries and were due to deaths at much younger ages than in other high-income countries. Emerging evidence points to variation in these declines across U.S. race/ethnic groups, with substantially larger life expectancy declines among Hispanic and non-Hispanic Black populations than among non-Hispanic white populations. The young age distribution of 2020 excess deaths in the United States was especially pronounced among the Black and Hispanic populations. However, the lack of U.S.-state specific life tables from 2019 onward leaves many unanswered questions about state variation the race/ethnic patterning of life expectancy declines during 2020. Indeed, there are many reasons to suggest that life expectancy declines, and the characteristics of the deaths responsible for these declines, varied across states and regions on account of differences in states' age distributions, populations' risk factors for COVID-19 mortality (e.g., prevalence of obesity), and mitigation strategies to prevent the transmission of SARS-CoV-2. Additionally, state variation in the effects of systemic racism and other social determinants of health on both the transmission and lethality of COVID-19 likely produced state differences in 2020 mortality rates across groups. To help address these outstanding questions, this study will use novel methods to document state differences in 2020 declines in U.S. total, male, and female life expectancy and illustrate how contributions from age-specific deaths, causes of death, and race/ethnic inequities in death rates shaped these differences. Critically, this study will produce much-needed estimates of race/ethnic variation in the decline of life expectancy across U.S. states, helping to inform future research and policy on racial disparities in the impact of COVID-19.

**Misracialization of American Indian and Indigenous Americans in population health studies: A scoping review to establish promising practices** Danielle Gartner* Danielle Gartner Ceco Maples Madeline Nash Heather Howard-Bobiwash

Indigenous Americans are often misclassified or misracialized as White or Hispanic in population health research. This misclassification leads to underestimation of Indigenous-specific mortality and morbidity, and subsequently, inadequate resource allocation. In many population-based studies or datasets, Indigenous identification is based on self-report or is assigned by a physician, study personnel, medical examiner, or funeral director, with or without consultation with next of kin. The most common fix to Indigenous misclassification is to use data linkage, whereby the study data (e.g., death certificates, cancer registries, etc.) are compared against a database that is thought to correctly identify Indigenous people (e.g., Indian Health Service patient records or tribal rolls). However, data linkages are only as useful as the data contained within the linked database. Here, we consider the strengths and weaknesses of the analytic approaches used by investigators to address Indigenous misclassification in population health studies. We carried out a scoping review based on searches in PubMed, Web of Science, and the Native Health Database for empirical studies that include Indigenous-specific estimates of disease or mortality and that take analytic steps to rectify racial misclassification of Indigenous people. We then extracted information from 81 articles and compared the analytic approaches used.  Correcting misclassification of Indigenous people increased Indigenous-specific estimates of mortality and morbidity, often indicating greater disease burden (compared to non-Indigenous counterparts). There is no perfect solution to the issue of misclassification in population-based studies, however, researchers must make informed decisions based on the strengths and weaknesses of possible approaches, clearly articulate those decision processes, and then use intentional, non-misleading language to describe the study and target populations.

**Mental health/function**

**"Racialized Stress, Coping, and Mental Health Among African Americans"** Dawne Mouzon*
Dawne Mouzon

The "Black-White paradox in mental health" reflects the unexpected finding that Black Americans exhibit lower risk of mental disorders than Whites, despite protracted societal marginalization. Research has not yet successfully identified the protective factors that account for this resilience.

The year 2020 was a turning point for most Americans. After 4 years of a presidency that inflamed White supremacist ideology, Americans witnessed the highly publicized police killings of George Floyd and Breonna Taylor. The year 2020 also laid bare the rampant health inequities posed by COVID-19. Despite the saddening nature of the dual pandemics of structural racism and COVID-19 among Black Americans, the present moment provides a unique opportunity to investigate the prevalence and efficacy of behavioral and emotional coping strategies African Americans use in the face of extreme racialized stress.

The Stress Process Model poses that coping may buffer against the negative mental health impacts of racialized stressors such as discrimination and anti-Black violence (Pearlin and Bierman 2013; Turner 2013). Little qualitative research exists on the specific coping strategies used by African Americans but to my knowledge, there is no quantitative, population-based research linking racialized stress, coping strategies, and mental health outcomes among African Americans.

This project draws on primary data collected from a 2022 online survey of a quota sample of 1,600 African Americans across four age cohorts, drawn evenly by gender. I use a series of validated measures for racialized stress, coping, resilience, and mental health to investigate the wide range of coping strategies African Americans employ under racialized stress, and whether these coping efforts either buffer against or exacerbate their risk of mental health problems. The findings will provide a more comprehensive understanding of African American risk and resilience in light of COVID-19 and rampant anti-Black racism.

**Biomarkers or biological pathways**

**Socioeconomic status and immune aging in older US Adults in the Health and Retirement Study** Eric Klopack* Eric Klopack Bharat Thyagarajan Jessica Faul Helen Meier Ramya Ramasubramanian Jung Ki Kim Eileen Crimmins

Life course socioeconomic and demographic factors including educational attainment, race and ethnicity, and childhood (SES) are very powerful predictors of large inequalities in aging, morbidity, and mortality. Immune aging, including accumulation of late-differentiated, senescent-like lymphocytes and lower level of naïve lymphocytes, may play a role in the development of the age-related health inequalities. However, there has been little research investigating association between socioeconomic status and immune aging, particularly age-related changes in lymphocyte percentages. This study used nationally representative data from more than 9000 US adults from the Health and Retirement Study to investigate associations between educational attainment, race and ethnicity, and childhood SES and lymphocyte percentages. Respondents with lower educational attainment, Hispanic adults, and those who had a parent with less than high school education had lymphocyte percentages consistent with more highly accelerated immune aging compared to those with greater educational attainment, non-Hispanic White adults, and respondents who had parents with a high school education, respectively. Associations between education, Hispanic ethnicity, and parents' education and late differentiated senescent-like T lymphocytes (TemRA) and B cells were largely driven by cytomegalovirus (CMV) seropositivity. Results suggest that CMV is a major driver of observed SES inequalities in immunosenescence and may therefore be an important target for interventions. Naïve T lymphocytes may be particularly affected by socioeconomic position and may therefore be of particular interest to research interested in inequalities in health and aging.

**Intergenerational transmission of SES and Smoking** Lucie Kalousova* Lucie Kalousova

This study examines the associations between parental and adult child smoking and considers how they may be modified by adult child's socioeconomic attainment and mobility. Using longitudinal data collected by the Panel Study of Income Dynamics in 1968, 1986, and 2017, I find that having a smoking parent is associated with a 9 percent to 10 percent increase in the probability of smoking as an adult in 1986 and 2017, respectively. Children of smokers who have a high school education or less are disproportionately more likely to resemble their parents with respect to their smoking behavior. Children of 1968 smokers are more likely to reproduce their parents' smoking behavior if they maintain their parents' economic position or are downwardly mobile than if they are upwardly mobile. The largest effect of parents' smoking is observed for the 1986 adult children who are downwardly mobile. The study shows the joint influence of socioeconomic status and parental health behaviors on children's adult outcomes and contributes to the existing literature by showing life course continuity in both.

**Socioeconomic status**

**Stratification in higher education attainment levels and cardiovascular health among US midlife adults** Anna Zajacova* Elizabeth Lawrence Sam Fishman

The extensive literature on the education-health association among U.S. adults might suggests few unexplored frontiers. We raise the overlooked issue of the health of the 60 million diverse Americans with subbaccalaureate education. We analyze cardiovascular health from Wave V of the Add Health panel across five subbaccalaureate attainments levels, relative to their high school or bachelor's degrees.  We also disaggregate the finding for major demographic subgroups. Results indicate no health returns to subbaccalaureate levels, completed or not.  In contrast, a large gap vis-à-vis bachelor's shows college graduates have significantly and substantially better health in most –though not all– population subgroups.

We examine explanations for this lack of health returns for subBA groups. We discuss the need for new frameworks and approaches to reorient the field to address this important anomaly in the education-health association.  Doing so will expand our understanding of complex social processes in today's diverse population.

**Health Across the Life Course at the Intersection of Class, Race, and Gender** Emily Dore*

Emily Dore Irene Browne

**Research Questions:** Are the effects across the life course of racism, sexism, and classism additive or multiplicative (i.e. intersectional), and is there evidence of diminished returns on Black adult health from childhood socioeconomic status (SES) that parallels the evidence of diminished returns from adult SES?

**Significance:** Research shows a strong relationship between childhood conditions and adult health, but few studies examine this relationship through an intersectional lens. This study builds on these studies in three ways: 1) examining health outcomes at the intersection of three identities, 2) assessing race and gender intersections with childhood SES separately from adult SES, and 3) analyzing a comprehensive set of health outcomes including measures of physical and mental health, as well as biomarkers.

**Methods:** Logistic and linear regression models estimate the relationship between childhood SES, race, and gender on several older adult health outcomes using the National Health and Aging Trends Study. Along with main effects, the models test interactions between childhood SES and race, childhood SES and gender, race and gender, and childhood SES, race, and gender.

**Preliminary Results:** The models show evidence for the main effects of childhood SES, race, and gender in the expected directions for most health outcomes, but only limited evidence for the interactions.

**Conclusion:** This study finds support that intersectionality is mostly conditional, as there was little evidence for interactions between class, race, and gender on older adult health. Nonetheless, it is important that even though there are few interactions, there were substantial additive effects on health. The most privileged groups were consistently less likely to report or exhibit poor health compared to the least privileged groups. Additionally, these findings suggest little support for diminished returns from childhood SES, which contrasts with literature on diminished returns from adult SES.

**Mortality**

**Educational trends in mortality in England & Wales: is the US an anomaly?** Jennifer Dowd*
Jennifer Dowd Andrea Tilstra

## Background

Increases in mortality in the U.S. have been concentrated in those with low education, with "deaths of despair" due to suicide, drug overdoses, & alcohol often implicated. Life expectancy gains showed signs of levelling off in the UK prior to COVID, but whether this is concentrated in those with lowest education is not known.

## Methods

Unlike the US, information on level of education and race/ethnicity is not available on death certificates in the UK but is available in the ONS Longitudinal Study (ONS-LS). ONS-LS is a 1% random sample of Census between 1971 and 2011 for England and Wales. Deaths are also linked to sample members' records. Restricted access to the data is available via a secure data service. Using data from 1991 to 2017, we test the association of education and mortality in the U.K. and compare to estimates to the U.S. We examine all-cause mortality at mid-life (ages 35-65) as well as specific causes of death including cardiovascular disease and "deaths of despair."

## Results

In contrast to observed associations in the U.S., we find no evidence of increasing mortality for people with low levels of education in the England and Wales, either for all-cause mortality or despair mortality. In fact, there was evidence of slight convergence with improvements in mortality for those with the lowest levels of education larger than for those with the highest levels of education.

## Conclusions

While the U.S. has seen increasing mortality in certain groups in recent years, direct comparisons with peer countries is difficult due to a lack of equivalent social data on death certificates. We use linked census data from the ONS-LS to test for trends in mortality by education in England and Wales, finding no evidence for similar trends. We conclude by examining potential explanations for these differences, including changing educational composition and different links between education and other social determinants of health in the U.K.

**Differentiating relationships between historical redlining patterns and area-based health outcomes by neighborhood racial and ethnic composition** Jenny Wagner* Jenny Wagner

Despite the profusion of recent studies linking federally endorsed redlining practices to contemporary health outcomes, researchers have yet to examine how these relationships may differ depending on neighborhood racial and ethnic composition. The common narrative in much of the literature is that historically redlined neighborhoods were predominantly Black and remain so today. While Black communities were most consistently impacted, redlining practices affected a wide range of minoritized populations. Disaggregating associations between redlining patterns and area-based health outcomes by racial/ethnic composition may provide insight as to whether and how long-term consequences of historical structural racism in our housing system may depend on neighborhood demographics. There are several reasons to expect this relationship may depend on racial/ethnic composition. For example, studies have shown for some Asian and Hispanic immigrant populations, residing in an ethnic enclave can be protective for health; however, much of the segregation literature tends to show the opposite effect in segregated Black neighborhoods. Further, one recent study shows the effect of living in a historically redlined neighborhood on cardiovascular health differs across racial and ethnic groups. While historically redlined neighborhoods vary widely in racial makeup, researchers have yet to examine how population health outcomes may vary accordingly. In this session, I will address whether relationships between historical redlining patterns and contemporary area-based health outcomes depend on neighborhood racial/ethnic composition, and to what extent. This work is particularly timely considering increased attention in recent years to the historical roots of racial health inequities and the ongoing conversation around reparations, including use of the infamous redlining maps to target areas for investment.

**Race/Ethnicity**

**Neighborhood Inequities and Violence: Examining of the Effects of Racialized Socioeconomic Polarization and Aggressive Policing on Youth Well-being** Julia Fleckman*
Julia Fleckman Lexie Ornelas Samantha Francois Brian Luckett Katherine Theall

The current study adds to the growing body of research examining how structural inequities and aggressive policing impact the well-being of children and youth. We examined the relationships between both neighborhood economic and racial polarization and police stop-and-frisk encounters and rates of child maltreatment and youth homicide in New Orleans, Louisiana. This secondary, ecologic cross-sectional study wase conducted with publicly available data from the New Orleans Police Department, the American Community Survey (ACS), as well as contractually approved vital statistics data from the Department of Children and Families, the Louisiana Department of Health, and the New Orleans Coroner's Office. Primary exposures included the rate of police stop-and-frisk encounters or pat downs within a census tract per population in 2018 by race for youth, and the Index of Concentration at the Extremes (ICE). Outcome variables included spatially smoothed child maltreatment rate per 1,000 and youth homicide rate per 1,000 within a given census tract. Multiple regression with generalized linear models was used to examine differences in violence-related outcomes by exposure to extreme racial and economic polarization and police encounters, accounting for sociodemographic characteristics of the neighborhoods. We observed a rate of neighborhood youth homicide per 1,000 at 1.28 (range = 0.00 to 4.00). Further, youth homicide was significantly correlated with the proportion of Black residents in the census tract ($r > 0.50$, $p < 0.0001$). Black youth had an average rate of police stop-and-frisk encounters and juvenile violations cited more than twice as high compared to their White counterparts. Neighborhoods with higher rates of police encounters experienced 0.38 more youth homicide events than neighborhoods with lower levels of police encounters ($p<0.05$). Results presented will also include examination of the relationships between ICE and youth violence, ICE and child maltreatment, and police encounters and child maltreatment. There is a need for strengthened policy focused on the impact of community racial and economic inequities and policing on violence directed at children and youth.

**Civic engagement around issues of environmental justice among Boyle Heights residents**

Connie Valencia* Connie Valencia Lucy Herrera

**Background:** Segregated Latino communities are more likely to experience high rates of environmental hazards and injustices in comparison to predominantly White communities. Toxic air pollution has been linked to cardiovascular disease, obesity, and respiratory illness. Civic engagement has potential to buffer against deleterious impacts of outdoor air pollution. Civic engagement helps to increase environmental knowledge and community capacity to influence local policies and practices. Communities with civically engaged residents are more likely to inform local policy, which may improve quality of life.

**Objective:** To develop a comprehensive understanding of factors that impact civic engagement among Latino residents that live in marginalized communities affected by environmental injustice.

**Methods:** Latino community leaders ages 18-75 from Boyle Heights, California were recruited through snowball sampling. Interviews were conducted with community leaders involved with the development of LegacyLA's Natural Park Air Pollution Solution. Interviews were 30-45 minutes long. Participants received a $50 gift card. Work was supported by the Campus Community Research Incubator (CCRI) grant.

**Results:**  15 participants were recruited and interviewed.  Interviews were conducted in person (n=12, 20%) and on line (n=3, 20%). Most participants were female (n=14, 93%), born in the US (60%) and current residents of Boyle Heights (80%). Participants were between 18-48 years of age and have been involved with LegacyLA for an average of 7 years. Participants discussed experiences with air pollution, involvement with LegacyLA, views on environmental justice, exposure to environmental toxins, and facilitators and barriers to civic engagement.

 **Discussion:** Civic engagement is essential to support and sustain environmental justice initiatives in low income, segregated Latino communities.

**State-level immigration policies and prenatal care among US and foreign born Latinx individuals in the United States (US): 2014-2019** Morgan Philbin* Morgan Philbin Natalie Levy Alison Gemmill Goleen Samari

**Background:** Nearly 1-in-4 US-born infants have a foreign-born birthing parent, a group that faces increased barriers to prenatal care receipt. Research commonly takes a 'one-policy one-outcome' approach, focusing primarily on the effects of healthcare policies. However, other social policies, particularly in the aggregate, can create climates of structural racism and xenophobia. We therefore examined associations between the state immigration policy climate and receipt of inadequate prenatal care among US- and foreign-born Latinx birthing people.

**Methods**: The Immigration Policy Climate Index includes 14 state policies and 5 sub-domains (benefits, education, labor, enforcement, identification). Using 2014-2019 National Vital Statistics System data, we ran a log-binomial model of the association between living in an exclusionary state—overall and by sub-domain—and receiving inadequate prenatal care among US- and foreign-born Latinx birthing people.

**Results:** The sample included US residents with singleton births (n≈23 million). The risk of inadequate prenatal care receipt was higher for US- (aRR: 1.05 [95% CI 1.04-1.06]) and foreign-born Latinx people (aRR: 1.17 [1.16-1.19]) living in exclusionary vs inclusionary states. All five sub-domains were significantly associated with inadequate prenatal care receipt for Latinx birthing people: e.g., exclusionary education (*US*: aRR: 1.11 [1.09-1.12]; *foreign-born*: aRR: 1.14 [1.12-1.15]) and identification policies (*US*: aRR: 0.94 [0.93-0.96]; *foreign-born*: aRR: 1.10 [1.08-1.11]).

**Conclusion:** Living in a state with an exclusionary immigration policy climate was associated with an increased risk of inadequate prenatal care, particularly for foreign-born Latinx birthing people. Non-health-related exclusionary policies affected adequacy of prenatal care, which is a precursor for infant/maternal morbidity. This highlights the need for a 'health in all policies' approach to advance health equity and identify targets for policy change.

**Health equity**

**The linkage between racialized police violence and birth outcomes: Do spatial and social proximity to the shooting and the victim matter?** Tongtan Chantarat* Tongtan Chantarat Anna K. Hing Naomi Thyden Asha Hassan J'Mag Karbeah David C. Van Riper Maeve Wallace E. Rachel R. Hardeman

Racialized policing is one of the oldest forms of structural racism. In Minneapolis, home of George Floyd, predominantly Black neighborhoods have a greater police presence than predominantly white neighborhoods. The unpredictable but persistent possibility of racialized police violence in one's community is a debilitating burden disproportionately borne by Black women. A previous study has shown that simply living in a neighborhood that experiences high levels of police contact is significantly associated with adverse birth outcomes for Black women. Understanding the mechanisms through which racialized police violence is a source of psychosocial stress for Black women is vital for interventions to reduce racial inequities in birth outcomes.

Our study examines the role of spatial (i.e., distance to the shooting) and social proximity (i.e., members of the racial group with shared lived experience) to the killing of Philando Castile on July 6, 2016, by the police in Falcon Heights, MN, and the ensuing civil unrest (exposure) on the risks of preterm birth (PTB) and low-birthweight birth (LBW) among Black and white women in Minnesota. We leverage the quasi-experimental causal framework. We geocoded births that occurred between July 5, 2015, to July 5, 2016 (pre-Castile shooting) and July 6, 2016, to July 6, 2017 (post-Castile shooting) in Minnesota (89,258 White; 5,567 US-born Black; 9,319 foreign-born Black). We compare the odds of PTB and LBW between pre- and post-Castile shooting and examine effect modifications by distance from the center of the census tract where the women resided to the traffic stop where Castile was shot and by racial group. Preliminary results reveal that the risk for LBW increased after the Castile shooting only among US-born Black women (OR=1.25; 1.01-1.54), but not for PTB (OR=1.18; 0.95-1.47). Distance is not a significant predictor or interaction in this relationship. We did not observe significant associations among White or foreign-born Black women.

**Structural factors**

**How Black women in the Midwest define and experience structural racism as it relates to health** Alexandria Kristensen-Cabrera\* Alexandria Kristensen-Cabrera Kozhimannil Katy Rachel Hardeman

**Background:** We continue to face a Black maternal and reproductive health crisis. From 2007 to 2016, the maternal mortality rate was 3.2 times higher for Black women than for white women in the United States. Moreover, from 1999 to 2016, the age-adjusted rate of endometrial cancer deaths was 2.25 times higher for Black women than white women in the United States. There is growing attention to the role of structural racism in these disparities. There is a gap in our understanding of how Black women in the Midwest define and experience structural racism as it related to reproductive health.

**Purpose:** This study aims to understand how Black women in the Midwest experience structural racism, primarily related to their healthcare and neighborhood experiences.

**Methods:** In this qualitative study, we conducted interviews with 20 Black women from August 2020 to August 2021. Individuals were recruited from three states within the Midwest via network sampling. Interviewees responded to open-ended questions around defining structural racism, personal experiences with structural racism in healthcare and communities, and recommendations for addressing issues. We analyzed interview transcripts using grounded theory, noted patterns as they occurred, and analyzed memos for main themes.

**Results:** All individuals lived in urban areas and had at least some college education. Themes were identified at three levels. Institution-level themes included the prison industrial complex, education inequities, immigration, and redlining. Neighborhood issues included affordable, safe housing, residential segregation, food deserts, and environmental hazards. Individual-level themes often were focused within healthcare and included microaggressions, paternalism, and racial stereotypes. Participant recommendations to address these issues included recruiting, retaining, and better-paying BIPOC providers, reviewing, addressing, eliminating racist practices, and centering Black women in care.

**Migration**

**Mental Health Scares Me the Most: Employment Discrimination and Mental Health Outcomes Among Somali Young Adults in the U.S.** Ashley Houston* Ashley Houston Alisa Lincoln Carmel Salhi

Refugees are at high risk for mental illness following their resettlement. While much prior scholarship has focused on pre-migration trauma to explain refugees' risk for mental illness post-resettlement, a growing body of research has called attention to the role of post-migration discrimination. Employment represents an important institution for refugees' social and economic integration into a host country. However, there are well-documented barriers to employment for refugee populations. Research on the intersections of migration, employment discrimination, and mental health remains relatively neglected within scholarship on post-resettlement discrimination. In this study, we examine Somali young adult refugees' experiences with employment, discrimination, and mental health outcomes. We draw on mixed methods data among Somali young adults in three U.S. states—Minnesota, Massachusetts, and Maine. Using a sequential mixed methods analysis approach, we began by conducting the quantitative analysis, using these findings to inform key themes in our qualitative analysis, and finally, using the qualitative analysis results to aid in interpretation of our quantitative results. We found that employment discrimination was consistently associated with higher levels of anxiety, depression, and PTSD in our sample. Moreover, we found that interpersonal experiences of discrimination further exacerbated this relationship. In our interviews with Somali young adults, participants identified the importance of employment for income, health care, and in descriptions of their wellbeing. However, these benefits were complicated and constrained by experiences of discrimination accessing employment and at work. Our findings suggest that multiple and overlapping forms discrimination—structurally, institutionally, and interpersonally—post-migration operate in tandem to impact young adult Somali refugees' mental health outcomes in the U.S.

**Policy**

## Moving the Needle: Impact of a Vaccination Reward Lottery on COVID-19 Vaccine Uptake in Louisiana Yin Wang* Yin Wang Julie Hernandez Charles Stoecker

**Objective**: Compared to the national average, vaccine uptake continues to lag in the Deep South. To boost vaccination rates, Louisiana launched the first and the only vaccine lottery campaign in the Deep South on June 17, 2021, to randomly reward residents that received a COVID-19 immunization. We investigated the impact of the lottery on vaccination uptake and identified characteristics of parishes that responded more strongly to the incentive.

**Methods**: We used an interrupted time series based on daily parish-level data on COVID-19 vaccinations to analyze the impact of the lottery campaign. A model-based recursive partitioning method was also used to separate vaccine uptake due to the Delta variant from the impact of the lottery campaign. We then performed sub-analyses grouping parishes by political affiliation, hesitancy rate towards COVID-19 vaccines, race/ethnicity, and socioeconomic status to detect heterogeneous responses to the vaccine lottery by these characteristics.

**Results**: The lottery incentive campaign reversed a pre-lottery downward trend in vaccine uptake and increased first dose vaccinations by 7.21 doses per week (estimate, 1.03 [95% CI, 0.61 – 1.45]; $P < .001$). More significant impacts were found in parishes with lower baseline hesitancy rates, more votes for Democrats, higher percentage of Hispanics, higher income levels, and more educated populations.

**Conclusion/Implications**: The lottery campaign promoted vaccine uptake in Louisiana, especially in parishes with profile associated with higher likelihood of accepting vaccines. Although effective on the whole, large, uncertain prizes like cash lotteries may have limited impacts on people with predisposed reluctance towards certain health behaviors like vaccination, which raises equity issues in the opportunity created by the incentive scheme. Future research may explore the possible heterogeneous impacts of small, guaranteed incentives for vaccine uptake to find more ways to tailor health policy for different populations.

**Policy**

**Effects of increased minimum wages on depressive symptoms and suicidal behavior in South Korea** Chungah Kim* Chungah Kim Celine Teo

**Background** Korea reports one of the highest rates of suicide among OCED countries. Few studies from Korea have reported a relationship between income shocks and mental health. In 2018, the Korean government implemented a 14.6% increase in the minimum wage. To further understand the relationship between economic policies and mental health in Korea, we conducted a quasi-experimental study to examine whether the minimum wage increase in Korea was associated with subsequent changes in depressive symptoms and suicidal behavior.

**Methods** Difference-in-difference (DID) design was applied employing a nationally representative study sample from the Korea Welfare Panel Study from 2014 to 2019 (Wave 9-14). The treatment group was defined using employment status (i.e. daily, seasonal, and short-term workers), and propensity score matching with nearest neighbor matching algorithm was conducted to improve covariate balance. Our sample includes persons aged 25 or over (n=2,938). Center for Epidemiological Studies-Depression (CESD) score and any suicidal ideation/plans/attempts were used as outcomes to measure depressive symptoms and suicidal behavior. We ran individual-level fixed-effects models with region- and year fixed-effects including an interaction term between the policy exposure period (2018-2019) and the treatment assignment for matched cohorts.

**Results** The drastic minimum wage increase was associated with a 0.18 (95% CI -0.36 to -0.01) point decrease in CESD and a 53% decrease (Odds Ratio: -0.63, 95%CI: -1.18, -0.08) in suicidal behavior among the treatment group, relative to the control group.

**Conclusion** Study findings add to the growing evidence that income shocks, such as increasing the minimum wage, may help improve mental health. These results suggest that suicide reduction strategies in Korea should consider decreasing financial precarity as part of their suicide prevention strategy.

**Policy**

**Racial disparities in cardiovascular mortality risk under a hypothetical U.S. federal minimum wage increase: 2008-2018** Audrey Renson* Audrey Renson Alexander Keil Jennifer Dowd Christy Avery Whitney Robinson Paul Zivich Monika Safford April Carson Allison Aiello

**Background:** Black-White inequities in cardiovascular disease (CVD) persist in the U.S., despite overall declines in CVD morbidity and mortality. Low income is more common among Black versus White Americans and is strongly associated with greater CVD mortality, suggesting that raising the federal minimum wage has potential to increase racial equity in CVD mortality.

**Methods:** We used data from the Reasons for Geographic And Racial Difference in Stroke (REGARDS) study, a national population-based cohort, and publicly available state policy data. We developed a novel extension of difference-in-differences called staggered discontinuation design, along with inverse-probability-weighted estimators and bootstrap standard errors, to estimate 10-year risks of CVD mortality among non-Hispanic Black and White adults aged >=45 years, had the U.S. federal minimum wage been raised gradually from $7.25 in 2009 to $11 in 2018. We used sampling weights to approximate national representativeness.

**Results:** Among the REGARDS participants alive in 2008 (n=27,096), 40% identified as non-Hispanic Black and 60% as non-Hispanic White. The observed 10-year risk of CVD mortality was 8.7% (95% CI: 8.0, 9.3) for non-Hispanic Black, and 6.8% for non-Hispanic White individuals (risk difference: 1.9%, 95% CI: 1.1, 2.7). Under the hypothetical federal minimum wage increase, those risks were reduced to 7.6% (95% CI, 0.0, 31.5) and 6.2% (95% CI 0.0, 26.0) respectively, suggesting the policy would benefit both groups, and reduce the disparity by 0.4 percentage points, but uncertainty is high relative to this effect size (95% CI, -5.0, 4.2). Graphical checks suggested no violations of parallel trends, a key assumption for our approach.

**Conclusions:** Our novel approach suggests that federal minimum wage increases could decrease Black-White inequities in CVD mortality. However, interpretation is limited by statistical uncertainty.  Alternative estimators or study designs may be needed for more precision.

**Gender**

## The Unexpected Effects of Structural Sexism on U.S. State Suicide Rates in the Midlife

Julene Cooney\* Julene Cooney

Recently the implications of the current medicalized approach to suicide prevention in the United States have come under fire in the literature. Treating high-risk individuals has failed to result in measurable improvements in suicide rates. A new framework of social suicidology is underway in which the effects of structural inequities and the oppression of marginalized populations on suicidality is considered.

In this project I study the effects of state level structural sexism suicide rates among men and women between the ages of 35 and 64. Using gender-stratified annual state level suicide rates from the CDC's National Vital Statistics system (1980 to 2019) as the outcome and a comprehensive list of state gender equity measures related to economic opportunity, economic success, educational success, political participation, and health as predictors, I ask if those states with greater gender equity and/or positive equity trends have lower midlife suicide rates for men or women. Driscoll and Kraay fixed-effect regression is employed, with time in years operationalized as a series of linear segments using joinpoint analysis. I control for the percentage of Black, Native American, and Hispanic residents, the percentage of residents born outside the United States, per capita alcohol consumption, percentage of households with firearms, population density, percentage of armed services veterans, Gini coefficients, and unemployment rates.

Preliminary results support my hypothesis: some gender inequalities are predictive of midlife suicide. But, while greater parity is generally protective for women, only physical health gender parity is protective for men. Knowing how structural sexism affects suicide rates directly implicates policy makers and population health professionals to engage in suicide reduction efforts.

**Biomarkers or biological pathways**

**Cross-sectional associations between prenatal depressive symptomology and the gut microbiome during pregnancy: Evidence from Cebu, Philippines** Elijah Watson* Elijah Watson Sahana Kuthyar Delia Carba Thomas McDade Christopher Kuzawa Katherine Amato

Prenatal psychosocial stress is linked to altered gut microbiomes, but this has largely been studied in animal models and to a lesser extent in clinic-based human studies in WEIRD (Western, Educated, Industrialized, Rich, Democratic) settings. To explore this question in a non-WEIRD context, we used data from the Cebu Longitudinal Health and Nutrition Survey to examine associations between prenatal depression and the gut microbiome during pregnancy. In 2017-2018, pregnant individuals (n=47) provided a fecal sample and survey data during the third trimester. Depressive symptomology was measured via a modified Center for Epidemiologic Studies-Depression scale. After 16S rRNA bacterial gene sequencing, the cross-sectional association between continuous depression scale scores and gut alpha diversity was estimated using a model accounting for incomplete microbial community structure. After restricting to genera with greater than 1% relative abundance in at least 10% of samples, we performed an exploratory differential abundance analysis at the genus level using a beta-binomial model that accounted for within-taxon correlation and multiple testing. Both models adjusted for self-reported health, smoking status, gestational age, cohabitation with the father of the pregnancy, and employment status. Prenatal depressive symptomology (modified CES-D range: 1-13) was associated with marginally lower gut alpha diversity (b=-0.023 [95% CI: -0.045, -0.001], p=0.037), as well as higher relative abundances of *Prevotella* and lower abundances of *Faecalibacterium, Bifidobacterium, Bacteroides,* and *Roseburia.* Prior studies have found lower abundances of *Faecalibacterium*, one of the most common human commensal gut genera, within individuals with major depressive disorder. Moving beyond summed counts of symptoms, future studies should characterize the dynamics of depressive symptomology throughout pregnancy in relation to repeated gut microbiome samples to improve causal inference.

**Neighborhood and school characteristics associated with biological pathways and physical health disparities: A prospective longitudinal study in low-income school-aged children**

Samantha Gailey* Samantha Gailey David Van Riper Alicia Kunin-Batson

Racial residential segregation experienced early in life is an upstream determinant of health and fundamental cause of disparities. Less population health research has examined racial segregation in schools, which may strongly influence life course health trajectories. Moreover, population studies on neighborhoods and schools rely largely on cross-sectional designs, which do not disentangle temporal order between exposure to racial segregation (or contextual correlates, e.g., racial composition) and health. Here, we examine associations between neighborhood and school proportion white and children's hair cortisol concentration (HCC) and body mass index (BMI) percentile. Demographic, health, and neighborhood data were collected at baseline, 12-, 24-, 36-, and 60-month follow-up visits as part of the NET-Works Study (n=534, ages 2-4, household income <65,000/year at baseline). Cross-sectional analyses estimated relations between school and (separately) neighborhood proportion white and health factors at the 60-month (wave 5) follow-up visit. Longitudinal analyses used multilevel models and data from all 5 waves to estimate changes in health factors as a function of changes in neighborhood proportion white due to moving. Cross-sectional results indicate that children attending schools and (to a lesser extent) living in neighborhoods with a higher proportion of white students/residents showed lower HCC and BMI. Longitudinal analyses also find that moving to a neighborhood with more white residents corresponded with decreases in HCC, particularly for Latinx children. Additional analyses using measures of school and neighborhood quality suggest that improved access to educational, health, and economic resources in places comprised of more white students/residents may explain observed protective associations. Evidence of stronger associations between school (relative to neighborhood) proportion white and health factors warrants more rigorous analysis once longitudinal school-level data become available.

**Biomarkers or biological pathways**

**Feeling Inequality: How Subjective Social Status during early adulthood impacts Allostatic Load in US adults** Nafeesa Andrabi* Nafeesa Andrabi

Allostatic load is the physiological cost of chronic or repeated stress exposures that activate the body's stress response. It can serve as an early indicator of later-life mortality risk and disease burden. To date, few studies of allostatic load have focused on how subjective social status (SSS), self-appraisal of status or perceived ranking in the social hierarchy, and changes in subjective social status may be associated with increased biological risks across the life course. SSS may allow researchers to better understand within-group variations as the experience of a particular SES (i.e. a certain education or income bracket) may vary in meaningful, nuanced ways that impact an individual's physiological regulator system. The present study draws on nationally representative data from Wave I (1994-1995; adolescence), Wave IV (2007-2008; early adulthood) and Wave V (2016-2018; adulthood), and Wave V biomarker data collected in a subsample of adults (N=5,381) from the National Longitudinal Study of Adolescent to Adult Health (Add Health). Allostatic load scores were calculated based on respondents' values for 16 metabolic, cardiovascular, and inflammatory biomarkers measured at Wave V when respondents were 34-44 years old. Linear regression models are used to assess the effects of early adulthood SSS and changes in SSS between early adulthood and adulthood on allostatic load in adulthood. Lower SSS in early adulthood is associated with higher allostatic load and thus increased physiological distress in adulthood. Further, decreases in SSS across the early life course are associated with increases in allostatic load in adulthood. This study makes significant contributions to the growing literature on inequality and health by examining changes in SSS and rich biomarker measures associated with stress-related illness among early adulthood and adulthood in a nationally representative US sample.

**Biological age mediates the effects of perceived neighborhood disadvantage on heart failure risk among African Americans in the ARIC and JHS cohorts** Ganga Bey* Ganga Bey james Pike Anthony Zannas Shelly-Ann Love Gerardo Heiss Qian Xiao Sharrelle Barber

Objective African Americans experience heart failure (HF) prematurely in comparison with other ethno-racial groups in the United States. Disproportionate exposure to both objective and subjective neighborhood disadvantage has been shown to contribute to these disparities, but the underlying biological mechanisms are not clear. We tested the hypothesis that biological age, measured by the epigenetic clock GrimAge, mediates the association of neighborhood socioeconomic and psychosocial factors with incident HF.

Methods Among 1,448 self-reported African Americans (mean age (standard deviation (SD)) = 65.3 (5.5)) dually enrolled in two community-based cohorts in Jackson, Mississippi—the ARIC and JHS study cohorts—who were free of HF as of January 1, 2000, incident hospitalized HF events through December 31, 2017 were classified by reviewer panel. Multilevel age- and sex-adjusted Cox causal mediation models were used to examine whether biological age mediated the effects of neighborhood socioeconomic (the National Area Deprivation Index (ADI)) and psychosocial (perceived physical disorder) disadvantage on incident HF leading to hospitalization.

Results A total of 334 incident hospitalized HF events occurred over a median follow-up of 18.0 years. GrimAge mediated a majority of the effect of perceived physical disorder (SD units) on HF (person-level indirect effect (Hazard Ratio (HR) 1.06, 95% CI 1.01-1.10) and neighborhood-level indirect effect (HR 1.17, 95% CI 1.02-1.32)), with the combined indirect effect explaining 95.1% of the relationship. Estimates for ADI did not reach statistical significance.

Conclusions Acting almost fully through biological age, perceived neighborhood disadvantage, in contrast with actual neighborhood deprivation, may confer increased risk of HF among African Americans.

**Perceived Neighborhood Characteristics and C-Reactive Protein in Diverse Older U.S. Adults: The Role of Latino Ethnicity and Nativity** Marina Armendariz* Marina Armendariz

Social, environmental and biological forces shape Latinos' vulnerability to cardiovascular (CVD) risk, including stressful contexts associated with one's residential environment. Further, there is a need to understand ethnic differences among Latino subpopulations regarding place-based health effects. Therefore, the present study aimed to 1) examine the association between perceived neighborhood characteristics and C-reactive protein (CRP), a systemic marker of inflammation linked to chronic stress, among older non-Hispanic White and Latinos (Mexican-origin vs. non-Mexican origin) and 2) test whether these associations vary by race/ethnicity and nativity. Data derived from the 2006-2016 waves of the Health and Retirement Study (HRS). The sample was comprised of 14,258 respondents, stratified by NHW (86%), Mexican-origin (8.3%), and non-Mexican origin Latinos (5.7%) and yielded a total of 26,115 observations (responses). Key independent variables included three subsets of perceived neighborhood characteristics (disorder, 'discohesion', and unsafety), race/ethnicity, and nativity. The key outcome of interest was logged CRP. Using linear multilevel models, results from the fully adjusted models indicate there was a positive association between disorder ($b$=.03, $p$<.001), discohesion ($b$=.01, $p$<.05), and unsafety ($b$=.03, $p$<.001), with CRP. Next, associations varied by both race/ethnicity and nativity; however, race/ethnicity interactions not in the expected positive direction. Non-Mexican-origin Latinos reporting higher neighborhood disorder, discohesion, and unsafety had lower CRP, on average, compared to NHWs. Additionally, foreign-born respondents reporting worse perceived neighborhood characteristics had lower levels of CRP. These results suggest that poorly perceived residential environments may contribute to physiological indicators of stress, as measured by CRP. Yet, these associations may have unique health implications among disaggregate Latino subgroups.

**Health care/services**

**The Role of the Public Charge Rule on US Citizen Children's Access to Health Services**
Cynthia Pando* Cynthia Pando Jack DeWaard

Immigration policies often target undocumented immigrants, but their impact extends beyond this population. Scholars have found that anti-immigrant policies targeting the undocumented population negatively affect undocumented immigrants' health and access to health services and their US citizen children's health and educational outcomes. A recent policy of concern is the public charge rule, which denies entry into the US and adjustment of immigration status to legal permanent resident based on immigrants' potential to become a financial burden. The Trump administration made proposed changes to this rule, specifically the expansion of public benefit programs that would be included in the rule. Supplemental Nutrition Assistance Program (SNAP) and the federally funded Medicaid program were two of those programs. However, various groups were concerned about the "chilling effects," which refers to the low engagement and participation in social services by eligible populations, among US citizen children. To understand the impact of the public charge rule on children of immigrants, we use data from the American Community Survey (2015-2019) to estimate (1) who was eligible for SNAP and Medicaid but not enrolled before proposed public charge rule changes, (2) who was likely to disenroll in either program based on parental immigration status after proposed public charge rule changes, and (3) how SNAP and Medicaid enrollment changed over time based on parental immigration status and race/ethnicity. We established SNAP and Medicaid trends before proposed changes in 2017 and compared those trends to post 2017 SNAP and Medicaid use by parental immigration status and race/ethnicity (US naturalized citizen parent vs. US undocumented parent). We explain the use of interacting parental immigration status with race/ethnicity measures by arguing how immigration policies are socially constructed by the intersectionality of racism and classism.

**Structural factors**

**Mechanisms of racialized neoliberalism: How U.S. policy has created racial health inequities** Maren Spolum* Maren Spolum

Scholars engaged in examining structural racism's impact on U.S. public health have called for future research to examine specific policies that create and exacerbate structural racism. Multiple studies have demonstrated significant deleterious shifts in life expectancy, infant mortality, and premature mortality during the early 1980s, suggesting public health researchers should direct attention to the substantial changes in the political and policy environments around that time period. Historians have written extensively on the political shift beginning in the 1960s and strengthening through 1970-1990 from the "New Deal order" to the still-dominant neoliberal order. Yet, public health scholarship regarding neoliberalism has not adequately engaged with understandings of structural racism, neoliberalism, or the symbiotic relationship between the two. In this presentation, I will offer a critical analysis of the existing literature to explicate a history and definition of "racialized neoliberalism" and put forth seven structural mechanisms of racialized neoliberal policies: austerity, devolution, privatization, deregulation, taxation, disenfranchisement, and punishment. In doing so, I will connect specific racialized neoliberal policy decisions over the past several decades to current racial health inequities. This presentation will provide a roadmap for future public health research elucidating the relationship between racialized neoliberal policies and racial health inequities.

**Aging**

**Lifecourse Earned Income Tax Credits (EITC) and Dementia Risk-A Sequence Analysis Approach** Haobing Qian* Haobing Qian Anusha Vable

**Objective:**  The Earned Income Tax Credits (EITC) is the nation's largest poverty-alleviation program. EITC receipt may impact subsequent dementia risk through several mechanisms, including, income supports and reduced stress and anxiety. No prior work has evaluated if lifecourse ETIC receipt patterns – including timing, duration and amount – affect long-term brain health. We characterize lifecourse. ETIC trajectory patterns using sequence analysis, and evaluate impact on dementia risk.

Methods: Data come from the National Longitudinal Survey of Youth 1979 cohort (1979 to 2018) (N = 7,350). We calculated federal EITC amount each year using the TAXSIM package in Stata; annual calculations are based on tax year, marital status, age of primary taxpayer, number of children under 18 in household and pre-tax wage and salary. We then characterized individual EITC trajectories for each respondent between ages 22-48 years using sequence analysis and used hierarchical clustering to group trajectories. Our primary outcome was a previously developed, algorithmically defined, 20-year cumulative dementia probability score (calculated the cumulative probability of dementia between ages 49-69). To estimate the association between EITC trajectories and dementia risk, we fit a linear regression model, adjusted for gender, race/ethnicity, respondent birth year, education at age 22, rural/urban area residence at age 14, southern birthplace at age 14, mother's and father's education, and a measure of cognition score assessed in 1980.

Results:  Data supported 10 trajectory clusters based on timing, duration and amount of ETIC receipt.  Compared to no EITC receipt from ages 22 to 48, the following trajectory patterns predicted elevated dementia risk: lower EITC amounts in the 30s only ($\beta = 0.05$, 95% CI: 0.026,0.08); increasing EITC in 30s, no EITC later ($\beta = 0.032$, 95% CI: 0.015,0.048); high  EITC in late 30s and early 40s, no EITC later ($\beta = 0.057$, 95% CI: 0.034,0.079); and high EITC in late 40s ($\beta = 0.048$, 95% CI: 0.018,0.077). Eligibility for small EITC payments in the respondent's 20s, did not predict elevated dementia risk compared to no lifecourse EITC.

Conclusion: Results suggest that EITC eligibility in respondents in 30s and 40s life predicts elevated dementia risk, while EITC eligibility in respondents 20s only does not predict elevated dementia risk. Our results highlight the importance of timing of EITC receipt for dementia risk.

**Health equity**

**School suspension and expulsion predict higher dementia risk in late life with implications for racial health inequities: Findings from the National Longitudinal Survey of Youth 1979 Cohort** Catherine Duarte* Catherine Duarte Maria Glymour Jennifer Ahern Mahasin Mujahid Jennifer Manly Irene Yen Alison Cohen Anusha Vable

Exclusionary school discipline – which removes students from their classrooms via suspension or expulsion – is a mechanism of structural racism that disproportionately shapes the experiences of minoritized children in US schools and may have implications for their health. Though studies find inequitable exposure to adverse childhood experiences (ACEs) or educational conditions contribute to racial inequity in dementia burden, few have examined effects of early-life school-based adversity. In National Longitudinal Survey of Youth 1979 (NLSY79) data (N=7125), we used linear regression to evaluate if early-life exclusionary discipline (3-levels: no discipline, ever suspended, ever expelled by analytic sample mean age 17.6 yrs) predicted 20-year cumulative dementia risk. Dementia risk was estimated with a risk score calculator previously developed and validated using cognitive and social factors measured up to mid-life in the *Health and Retirement Study*. Applying this calculator in NLSY79, we estimated participants' cumulative 20-year dementia risk from age 50 to 70. We used interaction terms to test for effect modification by indicators of structural marginalization (race/gender). We adjusted for childhood sociodemographics with sensitivity analyses accounting for school performance/behavior, substance use, and parental death. Compared to no punitive discipline, both suspension (RD:0.021;95%CI: 0.013-0.028) and expulsion (RD:0.064;95%CI:0.045-0.084) – which Black men and women disproportionately experienced – were associated with increased dementia risk. We also found evidence of effect modification: compared to White women, expulsion predicted higher dementia risk for White men (interaction term:0.056;95%CI:0.011-0.102) and Black women (interaction term:0.044;95%CI:-0.020-0.108), with even greater risk for Black men (interaction term:0.077;95%CI:0.025-0.128). These results suggest punitive discipline increases later-life dementia risk and contributes to racial health inequities.

**Adolescent mental health, academic performance, and school behavior after grandparental bereavement** Michelle Livings* Michelle Livings Emily Smith-Greenaway

Losing a parent or sibling is known to relate to poor health and wellbeing for adolescents. Far less, however, is known about the consequences of grandparental death for adolescents, even as these deaths are far more commonly experienced by youth. Given that grandparents play a critical role in the lives of grandchildren, we anticipate their deaths are unique risk factors for adolescents' poor health and development.

To examine this, we used data from the Fragile Families and Child Wellbeing Study, focusing on the mother-child dyads in the year-9 and year-15 surveys. We examined how a grandparent's death corresponds with adolescents' mental health, academic performance, and school behavior—each of which are known to have longer-term health consequences.

The findings revealed distinctions across the gender of both the decedent and adolescent, and the specific adolescent outcome studied. A grandmother's recent death corresponded with a large increase in adolescent boys' depressive symptoms, whereas a grandfather's death is most consequential for girls' and boys' externalizing outcomes. Around age 15, girls whose grandfathers had died recently had significantly lower grades, and were more likely to have trouble paying attention in school and to have recently skipped school relative to those not bereaved—each of which corresponds with girls' short and long-term health risk behaviors and outcomes. Moreover, boys who recently experienced a grandfather's death similarly had worse grades and were more likely to have recently been expelled from school than those not bereaved.

Together, this study emphasizes the need to consider family bereavement—including highly normative family losses—as consequential for understanding population health inequalities. Adolescence is a critical point in the life course wherein future inequalities are rooted, and this study will provide a valuable first look at how grandparental loss can play a role in manifesting those disparities.

**Racial/Ethnic Heterogeneity in Parental Wealth and Substance Use from Adolescence to Young Adulthood** Sicong Sun* Sicong Sun Darrell Hudson Hedwig Lee

Background. Substance use has a negative impact on health outcomes. Little consensus exists regarding the relationship between socioeconomic position and substance use across race/ethnicity. Moreover, research that has explored the relationship between parental wealth and substance use is limited. This study examines how race/ethnicity and socioeconomic factors, especially parental wealth, are associated with substance use across an 18-year span from adolescence to young adulthood.
Method. Data were drawn from the National Longitudinal Survey of Youth 97 (1997-2015). Substance use behaviors were measured by self-reported heavy episodic drinking, daily cigarette smoking, and use of cannabis. Parental wealth and parental education were measured at baseline. Other socioeconomic factors included education, employment status, household income. Two-level logistic regression was performed.
Results. White respondents were more likely to drink, smoke cigarettes, and use cannabis compared to other racial/ethnic groups. More parental wealth was associated with greater odds of heavy episodic drinking, but lower odds of cigarette and cannabis usage. Race/ethnicity modifies the relationships between parental wealth and substance use. Whereas non-Hispanic Black respondents from wealthier families had lower odds of heavy episodic drinking, the direction was opposite among non-Hispanic Whites. Regarding smoking, parental wealth was more protective in White families compared to non-White families. For all non-White groups, wealth functioned as a protective factor against smoking, but the association was weaker than for non-Hispanic Whites. Finally, wealthier Hispanics were more likely to smoke daily and use cannabis compared to other racial/ethnic groups.
Conclusion. Findings highlight a nuanced patterning of racial/ethnic heterogeneity in the relationship between parental wealth and substance use behaviors. The wealth gradient did not apply similarly across all racial/ethnic groups.

**Methodological approaches to studying public health**

**Defining Despair: Assessing Different Domains of Despair and their Association with Substance Misuse and Suicidality in Early to Middle Adulthood** Iliya Gutin* Iliya Gutin William Copeland Jennifer Godwin Kathleen Harris Sherika Hill Lilly Shanahan Lauren Gaydosh

Despite the considerable scientific interest in documenting growing 'despair' among U.S. adults, far less attention has been paid to defining despair and identifying appropriate measures in extant survey research. Emerging perspectives from social science and psychiatry outline a comprehensive, multidimensional view of despair as both a measure in and of itself and a central mediating factor connecting individuals' psychosocial environments with harmful, self-destructive health behaviors. Consequently, despair takes on many forms, reflecting a diverse set of cognitive, emotional, biological and somatic, and behavioral inputs. This framework implies that despair represents a more nuanced and cumulative reality of how individuals' emotions, self-worth, mastery, and overall affect operate in tandem with maladaptive behaviors and biological dysregulation that are also indicative of chronic distress and hopelessness. The current study assesses the structure and plausibility of this framework based on longitudinal data spanning early to middle adulthood from the National Longitudinal Study of Adolescent to Adult Health (Add Health). Using structural equation modeling, we model the interrelationship among these domains of despair at ages 24 to 32 and how they influence key despair-associated behaviors including binge drinking, prescription and illegal drug use, and suicidality at ages 34 to 42. Preliminary results provide empirical evidence in favor of conceptualizing despair as having different domains; however, the strength of the correlations among the distinct cognitive, emotional, biological and somatic, and behavioral latent constructs of despair varies – as does their subsequent association with despair-related health behaviors. Critically, drug use appears to be more strongly related to the different domains of despair, echoing growing concern that the deaths and behaviors categorized by the despair label have distinctive etiologies.

**Socioeconomic status**

**Adolescent Scholastic Profiles and Health in Midlife** Elizabeth Lawrence* Elizabeth Lawrence Robert Hummer

Educational attainment is strongly related with adult health in the United States, and the differences are widening. In explaining this relationship, most research identifies the skills and resources gained through higher education, though some studies call into question the causal impact of education, pointing to reverse causality and the importance of confounders. Yet, these studies do not examine how the multiple mechanisms of education's influence begin at the start of schooling. This study intends to add to our understanding of how the schooling process shapes individuals to attain both higher education and better health. We identify adolescent scholastic profiles to represent how well students are doing in school, and analyze if and how these profiles are associated with the health of adults entering midlife. We use data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) to determine the extent to which adolescent scholastic profiles are associated with midlife health, how much they account for education's effects on midlife health, and whether these relationships differ across race/ethnicity, gender, and socioeconomic background. Results show six adolescent scholastic profiles, each demonstrating a unique combination of adolescent educational dis/advantage. The profiles are strongly related to measures of adolescent health, suggesting conceptual models should consider the life course development of the education-health relationship. The scholastic profiles are strongly associated with subsequent educational attainment, but educational attainment remains a robust predictor of health beyond these scholastic profiles. Further analyses to be conducted prior to the meetings will examine the sensitivity of these results and evaluate heterogeneity by race/ethnicity, gender, and socioeconomic background.

**Aging**

**Examining the roles of living alone and widowhood in the trends of obesity and sarcopenic obesity by birth cohorts among American older men and women** Youngjoon Bae* Youngjoon Bae

Obesity among older Americans has been aggravated in younger cohorts, but its risk for mortality has been recently questioned. Sarcopenic obesity shows a more robust relationship with mortality and accurately reflects physiological changes in later life. However, the trends of sarcopenic obesity among older adults by cohort have not yet been well-reported. Furthermore, one noticeable demographic trend among older adults, living alone, is not yet well-incorporated into the research of obesity. This study asks: (Q1) Do younger cohorts among older men and women experience greater likelihoods of (self-reported and measured) obesity and sarcopenic obesity? (Q2) Do younger cohorts among older American men and women tend to live alone than their older counterparts? (Q3) How does living alone affect adverse health outcomes, especially while adjusting for marital status that overlaps with living alone in measurement? Data were drawn from the 2006-2016 Health and Retirement Study (HRS). Participants aged 65 years and older were chosen and stratified by gender (n=2,890 for men and n=4,279 for women). Generalized estimating equation models with survey weights were used for analysis. Results show that younger cohorts had greater likelihood of obesity and sarcopenic obesity. While only younger male cohorts tended to live alone than older cohorts, their living alone status or marital status were not related to obesity or sarcopenic obesity. Among older women, the cohort was not a factor for living alone, but white or higher education was related to living alone. Meanwhile, their living alone was linked to the lower odds ratios of obesity and sarcopenic obesity. In contrast, widowhood indicated greater ratios compared to currently married. Specifically, older women who both widowed and lived with others simultaneously were likely to diagnose with obesity and sarcopenic obesity. These associations disappeared by adjusting for race, education, wealth, and physical activity. Analyses imply that living alone (probably after spousal bereavement) might become a luxury, especially for younger cohorts of older women. They might extend the odds of obesity and sarcopenic obesity by commensality with poor non-spousal family members.

**Biomarkers or biological pathways**

**Nuclear Bomb Testing Fallout AND Interrupted Time Series Connection with State by State Maternal Mortality Incidence** Paul Nelson* Paul Nelson

From 1951 through 1962, 100 atmospheric nuclear devices were tested in Nevada. These tests represent an Interrupted Times Series connection with subsequent dose-response maternal mortality incidence for the affected states. Given the associated patterns of the atmospheric jet stream prevalence, the downwind exposure patterns among the affected States revealed substantial differences. These differences follow an epigenetic pattern. A cluster attribute of the data possibly suggests the presence of multiple interacting and unidentified, population health attributes for the state by state worsening incidence of maternal mortality during the last 50 years.

**Chronic disease**

**THE ASSOCIATION BETWEEN ANGER AND STROKE AMONG AFRICAN AMERICANS: THE JACKSON HEART STUDY** Fei Teng* Fei Teng Elizabeth Heitman Marino Bruce Roland Thorpe, Jr. Keith Norris Bettina Beech

Introduction:
Stroke is the fifth leading cause of death and the leading cause of disability in the US. African Americans have almost twice the risk for stroke as Whites and higher resulting mortality. High levels of anger are associated with poor cardiovascular outcomes, but few related studies have focused only on African Americans. This study examines the association between anger and stroke in the Jackson Heart Study, the largest single-site prospective cohort study of cardiovascular diseases among African Americans.

Methods:
Data were drawn from the Jackson Heart Study, a sample of 5306 adults in the Jackson, MS area. The outcome of interest was stroke, a binary variable derived from self-reported stroke history and symptoms. Anger was measured with two variables derived from the Spielberger Trait Anger Scale, representing internalized anger and expressive anger. Covariates included age, socioeconomic status, smoking, alcohol use, comorbidities, discrimination, depressive symptoms, and stress. Sample characteristics were provided using means and standard deviations for continuous variables and proportions for categorical variables. Two multivariable logistic regressions were used to assess the associations between internalized and expressive anger and stroke, adjusting for covariates.

Results:
After adjusting for demographics, socioeconomic variables, health behaviors, comorbidities, and psychosocial variables, higher levels of internalized anger were associated with decreased odds of stroke (OR=0.9, 95% CI:0.90-0.99). There were no significant associations between expressive anger and stroke (p=0.942, 95% CI: 0.95-1.05).

Discussion:
The unexpected finding that higher levels of internalized anger are associated with lower odds of self-reported stroke suggests a need for research on moderating variables, such as mechanisms for coping with internalized anger, and detailed assessment of outcomes that cannot be accounted for by self-report, such as death.

**contraceptive use**

**Factors Associated with Contraceptive Use Profiles in Two sub-Saharan African Countries: A Sequence Analysis** Jiao Yu* Jiao Yu Devon Kristiansen Kathryn Grace Elizabeth Heger Boyle

**Background**:  Contraceptive adoption and continuation are crucial for reducing unintended births, unsafe abortions, and maternal death. While the prevalence of contraception in sub-Saharan Africa has increased considerably since the 1980s, it remains substantially lower in those countries than in most other regions of the world. Previous studies on African women's contraceptive use have primarily focused on their current contraceptive behaviors, but have failed to account for the shift of contraceptive use for a substantial period of time. Studying contraceptive use profile patterns may shed new light on how risk factors proliferate over the dynamics of contraceptive practice and uncover opportunities to reduce reproductive inequality among women in low-income African countries. In this study, we aim to (1) identify typical contraceptive use profiles among women of reproductive age in Burkina Faso and Kenya, and (2) examine how resources (socioeconomic status), access (service visits and healthcare insurance), and attitude (towards family planning) influence contraceptive dynamics in these countries.

**Methods**: We draw data from the Performance Monitoring for Action (PMA) phase 2 survey of 14,977 women (aged 15–49 years) from Burkina Faso and Kenya. Retrospective contraceptive calendar data on monthly family planning information for three years prior to the survey interview was used to construct contraceptive use profiles (from Jan 2018 to Nov 2021).We distinguish women's contraceptive status through six categories: pregnancy, no family planning method used, long-acting methods (sterilization/implants/IUD), intermediate-acting methods (injectables/pill), short-acting methods (condom/ diaphragm/foam/jelly/emergency contraception), and traditional methods(standard days/LAM/ rhythm/withdrawal/other). Women's contraceptive use profiles for the past three years were identified using sequence analysis and cluster analysis. In addition, multinomial logistic regression models were performed to examine the association between various factors pertaining to resources, access, and attitude, and women's contraceptive profiles while adjusting for the clustering effect and complex survey design.

**Results:** (1) We identified six distinct contraceptive use profiles including pregnant mothers (pregnant at least once and not using contraception, 9%), non-users (not using contraception most of the time during the past three years, 53%), long acting users (using sterilization, implants, or IUD, 17%), intermediate acting users (using injectables or pill, 16%), short acting users (3%) and women rely mostly on traditional contraceptive methods (2%).  Around half of the women of reproductive age were classified as non-users in the two sub-Saharan African countries. (2) Multinominal logistic regression models showed that socioeconomic resources, healthcare access, and attitudes towards family planning significantly impacted women's contraceptive use patterns. Urban women and women with higher levels of education were more likely to be in the contraceptive user groups. The use of intermediate-acting contraceptives was linked to a higher family wealth index. Non-users had limited access to family planning services as evidenced by their lower likelihood of visiting healthcare facilities for the previous 12 months and the fact that they were less likely to have health insurance. Those who had positive attitudes towards family planning were more likely to adopt long acting and short acting contraception. Furthermore, there was a between-country variation in the contraceptive use patterns.  The influences of resources, access, and attitude on the uptake of contraception were more pronounced among Kenyan women compared to women in Burkina Faso.

**Conclusion:** Most of the participants are consistently using one contraceptive method (or non-use)

without switching between methods. The identified contractive use profile patterns indicate a low prevalence of contraception in Burkina Faso and Kenya. Factors related to resources, access, and attitude may play significant roles in women's family planning decisions. This study highlights the need of reducing inequalities between family planning utilization across women with different socioeconomic status as well as implementing sustainable measures to enhance service access. Programs targeting vulnerable groups to reiterate the benefits of contraception and to raise awareness for modern contraceptive methods could be a key component to protect women's reproductive health in sub-Saharan African countries.

**Disability justice**

**Bridging the gap: How interprofessional collaboration can support family-centered emergency preparedness** Shelby Flanagan* Shelby Flanagan Julia Sterman

Children with disabilities and their families are at higher risk during emergencies and disasters. This has been attributed to the lack of disability inclusion in emergency response as well as disparities in preparedness. This speaks to a need for emergency preparedness that centers children with disabilities and their families. The aim of this study was to provide recommendations for practice and policy to better support family-centered emergency preparedness inclusive of children with disabilities, with the ultimate objective of improving safety outcomes for children with disabilities and their families in emergency situations. This study consisted of 46 interviews with providers, public safety professionals, and advocacy organization representatives about their role in emergency preparedness for families of children with disabilities. Qualitative content analysis was used to pull themes from participants' responses. Participants expressed interest in family-centered emergency preparedness, and stated that greater awareness, more education, increased networking between professions, and institutional support would enable their involvement. This finding has implications for the importance of interprofessional collaboration in supporting family-centered emergency preparedness for families of children with disabilities. Stronger interprofessional networks would help overcome many of the barriers identified by participants, and advocacy groups appear to be well-positioned to bridge the gap between these professionals and their areas of expertise.

**equity in cancer prevention**

**Un poco de luz: Learning from cervical cancer screening among uninsured Hispanics in Minnesota** Gabriela Bustamante* Gabriela Bustamante Mónica Cruz Jessica Pakonen Alexandra Jensen Rodolfo Gutiérrez

Although Hispanic people represent 17% of the uninsured population in Minnesota, they represent over 60% of clients at Minnesota's National Breast and Cervical Cancer Early Detection Program (Sage). Using a 'bright spot' approach, we identified facilitators at multiple system levels that allow low-income uninsured Hispanic women to overcome structural barriers to access free cervical cancer screening services (CCSS). We also examined the impacts of rural/urban residency and the COVID-19 pandemic on CCSS access and perceptions. Between March and June 2021, we conducted five virtual focus groups with Sage Hispanic clients from urban (n=12) and rural (n=11) Minnesota and six key informant interviews with Sage staff. Three research members analyzed transcripts using conventional content analysis and met to identify themes and resolve discrepancies. Participants identified facilitators at all levels: (1) <u>individual:</u> more education on cancer prevention in Minnesota (vs. countries of origins); familism as key motivator for seeking care; (2) <u>interpersonal:</u> word of mouth as the main source of information; positive past experiences with clinics/providers; (3) <u>organizational:</u> provision of Sage services through safety net clinics in urban and rural Minnesota; availability of bilingual providers/staff; presence of case managers familiar with Sage paper work; (4) <u>community:</u> tight networks (neighborhoods, employers and churches) and high levels of solidarity within communities; (5) <u>policy:</u> confidentiality of information within Sage. Rural participants reported increased barriers including limited resources and more experiences of racial discrimination. COVID-19 heightened uncertainty about healthcare access including CCSS. Identified areas of improvement for Sage CCSS include clarity of billing and covered services. Unlike past research focused on barriers, this community-engaged study identified facilitators to inform efforts to provide CCSS to low-income Hispanic women.

**Health behaviors**

**How Dietary Assimilation Compares Across Generation and Age Group for Asians and Hispanics** Kendal Lowrey* Kendal Lowrey Lauren Newmyer

This study uses data from the 2011/2012-2017/2018 National Health and Nutrition Examination Survey (NHANES) to examine the extent to which Asian immigrants assimilate to U.S.-born non-Hispanic white diets and healthy eating patterns, relative to Hispanics. Previous research in this area concentrates mostly on youth and has not focused on Asians. Preliminary analyses highlight that descriptively, Asians increase in food similarity to the U.S.-born over time, however, their diets are still roughly 17 percent less similar to USB diets than Hispanics in the third generation. This pattern is similar for both children and adults. For healthy eating, patterns vary by age. For children, Mexicans and Asians have similar eating patterns in the first and second generation. However, the decline tapers off for Asians and their diets remain healthier, whereas Mexican eating behaviors decline sharply to reach USB levels. Mexican adults have worse diets in every generation, while Asians improve despite a decline in the second generation.

**Health behaviors**

**Do meals patterns that predict diet quality vary by food security status? A decision tree model.** Jennifer Makelarski* Jennifer Makelarski Annie W. Lin Christopher Colvin Adrian K. Cornely Faiza Kalam Sougata Sen Grace M. Mirsky

Eating patterns are associated with diet quality, but the influence of food security on this relationship is unclear. We used decision tree modeling to examine whether meal patterns (food group intake + meal timing) that predict diet quality vary by food security status.

Data from NHANES 2015-16 24-hour diet recalls were used (N=4606). Food groups included: fruit, fruit juice, vegetables, grains (refined, whole), animal and plant proteins, dairy, oils, solid fats, added sugar and alcohol. Input parameters included participants' intake proportion for each food group at each meal, relative to their total intake of that food group. Diet quality was calculated using the Healthy Eating Index (HEI) 2015; a high HEI was defined as a score ≥59.24 (the 75th percentile for all participants). Food security, assessed with the 18-item Food Security Survey, was categorized as secure vs low or very low food security. Decision tree modeling identified inputs contributing to the highest information gain and the optimal classification threshold for each input.

Overall, 25% of participants were food insecure. High HEI was predicted among food secure participants only at breakfast: 1) fruit (≥0.25%) and refined grain (1.57%) intake. Among food insecure participants, high HEI was predicted by 1) breakfast fruit intake (≥5.40%) and dinner refined grain intake (<12.40%) and 2) breakfast fruit (≥5.40%) and dairy (≥42.9%) intake with dinner refined grain intake (≥12.4%). These thresholds accurately classified 75% of food secure and 81% of food insecure participants' diet quality.

Although fruit and refined grain intake predicted diet quality irrespective of food security, patterns of dairy intake were only important for food insecure participants. Interventions targeting eating patterns to improve diet quality may be more effective if educational strategies are tailored by experiences of food insecurity.

**Health care/services**

**The impact of the patient-centered medical home on rural flu vaccine uptake** Bobbie
Johannes* Bobbie Johannes

The patient-centered medical home (PCMH) may improve rural flu vaccine uptake because it is
designed to deliver patient-centered, coordinated, comprehensive and accessible healthcare. The
objective of this study is to determine whether having a PCMH provider as one's usual source of
care improves receipt of a flu vaccine among rural patients.

The Andersen Model of Healthcare Utilization is used to assess how the PCMH may be associated
with flu vaccine uptake at patient-, community- and system-levels by controlling for factors that may
confound this relationship. Data come from the 2015-16 Medical Expenditure Panel Survey (MEPS).
Logistic regression is used to determine whether rural patients with a PCMH usual source of care
(USC) are more likely to receive a flu vaccine, compared to rural patients with a non-PCMH USC.

Most rural MEPS respondents receive their USC from a non-PCMH provider (59%). Rural PCMH and
non-PCMH patients are demographically similar, but a higher proportion of rural PCMH patients
earn between 55k-75k/year. Overall, rural PCMH patients had higher odds of receiving a flu vaccine
compared to non-PCMH patients, but the results were not significant. Significant patient-level
factors include age and education which improve odds of receiving a flu vaccine, whereas
employment and being single decrease odds. At the community-level, being more rural and an
increasing number of primary care providers in the county significantly improve odds of receiving a
flu vaccine. Finally, significant system-level factors include having multiple locations which decrease
odds and each additional primary care provider at the practice increases the odds of receiving a flu
vaccine.

Overall, this study determined that rural PCMH patients were not more likely to receive a flu
vaccine, compared to rural non-PCMH patients. Having any USC is a health behavior that may
improve the odds of receiving a flu vaccine because the patient is already engaged with the
healthcare system.

**Health equity**

**Can differential employment quality explain educational inequities in mental health? A causal mediation analysis using the parametric mediational g-formula** Kieran Blaikie* Kieran Blaikie Jerzy Eisenberg-Guyot Sarah Andrea Shanise Owens Anita Minh Alexander Keil Anjum Hajat

**Background:**

Educational attainment influences mental health through access to health-promoting material and social resources and improved health literacy. Employment Quality (EQ), a multidimensional construct reflecting the relational and contractual features of employer-employee relationships, is increasingly recognized as a possible mediator of educational inequities in mental health due to its relevance for work-related stressors, financial security, and health insurance coverage throughout adulthood. To date, however, no studies have examined the extent of this mediation in the United States, or how it varies across racialized and gendered populations.

**Methods:**

We use the 2001-2019 Panel Study of Income Dynamics to construct a cohort of working-age adults. We implement principal component analysis to construct a composite EQ measure using nine indicators of EQ. Randomized interventional analogues for natural direct and indirect effects of baseline educational attainment (≤High School: No/Yes) on end of follow-up prevalence of moderate mental distress (Kessler-6 Score ≥5: No/Yes) are estimated using the parametric mediational g-formula.

**Results:**

Comparing counterfactual populations differing only by educational attainment, having low educational attainment would have been associated with a 5.3% greater prevalence of moderate mental distress at end of follow-up (Total Effect: 5.3%, 95% CI: 2.3%,8.3%), with approximately 36% of this effect mediated by differences in EQ (Indirect Effect: 1.9%, 95% CI: 1.1%,2.7%). This mediated effect is comparable across racialized and gendered subpopulations, though would not be identified if analyses considered only those consistently employed throughout follow-up (Indirect Effect: 0.5%, 95% CI: -0.8%,1.9%).

**Conclusions:**

Approximately one third of the U.S. educational inequity in mental health may be mediated by differences in EQ, underlying the importance of uncoupling EQ from educational attainment to address mental health inequities.

**Health equity**

**Epistemic interventions for public health** Sarah Clairmont* Sarah Clairmont

Canadian perspectives on health and disease have shifted from an individualistic biomedical focus to a broader understanding of health as socially determined. Contributions from social determinants theory point to an urgent need for governments to promote more equitable distributions of health by developing public health strategies that target factors operating at a level above the individual, especially factors that contribute to unequal distributions of power and monetary resources (e.g., discriminatory hiring practices and implicit bias). Yet, despite increased recognition of the impact that social factors have on health, health inequities persist in Canada—in some cases they are worsening.

Understanding the mechanisms that produce and maintain inequitable distributions of health – so that something can be done about them – is an important and ambitious aim for public health. This paper brings a philosophical perspective to bear on the apparent challenges of achieving health equity in Canada. Philosophers like Charles Mills (1997), Miranda Fricker (2007), Kristie Dotson (2011), José Medina (2013), and Linda Martín Alcoff (2020) have shown that social injustices are part and parcel of *epistemic* injustices. But, I argue, the epistemic dimensions of injustice have been overlooked in several areas of public health, from scholarship to practical reform efforts. I propose an epistemic model for understanding and explaining inequities in health, not as a replacement for social determinants theory, but as a conceptual tool for public health after the social determinants revolution.

**Health equity**

## Prevalence and Spatial Distribution of "Optimal Birth" Outcomes in the US, 2018-2019

Lauren Dyer* Lauren Dyer Caryn Bell Susan Perez Joia Crear-Perry Katherine Theall Maeve Wallace

Background: Adverse outcomes represent only one facet of many in the full experience of pregnancy and pregnancy outcomes. A shift in focus towards healthy reproductive outcomes may reveal opportunities for novel interventions and strategies to promote optimal health. Yet studies on optimal birth experiences and outcomes remain sparse.

Methods: Optimal births were those that met the following criteria: pregnancies without maternal clinical complications, vaginal delivery at a gestational age of 37 weeks or later, and infant birth weight of >2,500 grams with no congenital anomalies, no abnormal conditions, and 5-minute APGAR score $\geq$7. We calculated Empirical Bayes smoothed (EBS) rates of optimal birth for the total population and by maternal race/ethnicity by applying the smoothing tool in GeoDa version 1.18.0.10 We defined counties achieving greater racial birth equity as those where the total population EBS optimal birth rate was higher than the national 75th percentile and the absolute difference between maternal racial/ethnic categories was smaller than the national 25th percentile difference.

Results: During the 2018-2019 period, 49.80% of overall births could be classified as an "optimal birth" according to the study definition. There was significant local clustering of births based on spatial analyses (Moran's I=0.471; p<.001). Of the 3140 US counties, only 282 (8.98%) appeared to advance White-Black equity in optimal births, and 205 (6.53%) appeared to advance White-Hispanic equity in optimal births.

Conclusions: In the effort improve maternal health, we should focus not only on the absence of negative outcomes, but also the occurrence of positive outcomes, a paradigm shift that may prove insightful and effective. Our analytic results suggest that optimal births can be measured and that spatial patterns exist at the county level for this outcome.

**Health equity**

**Transparency and Accountability in Health Care: Bridging community organizing and quality improvement to advance health equity** Ida Griesemer* Ida Griesemer Kristin Black Deborah Gurewich Aditi Garikipati Stephanie Baker

The terms transparency and accountability appear in various disciplines and frameworks as organizational ideals or guiding principles for governance, but there is limited cross-sector analysis of what these terms mean and how they may be employed to advance population health equity. Health services models such as Learning Health Systems and High Reliability Organizations point to transparency and accountability as quality improvement mechanisms but lack an explicit emphasis on the role of these mechanisms in eliminating racial disparities in health care. In this commentary, we examine the origins of transparency and accountability in community organizing efforts to address structural and institutional racism. We review community organizations' websites and reports, and interview organizational leaders to understand the meaning of transparency and accountability from the perspective of antiracist community organizations. Next, we review the academic literature to identify current health services models that name transparency and accountability as guiding principles for health care. We then construct a bridge between community organizing and health services conceptions of transparency and accountability to demonstrate how an antiracist lens can ground efforts towards health equity. We argue that centering the antiracist conception of these commonly cited principles is essential to address health equity, and that failing to do so could result in well-intentioned quality improvement efforts widening racial disparities in care delivery. Finally, we offer recommendations for health services organizations to define metrics for transparency and accountability across multiple social ecological levels (policy, community, organization, and interpersonal relationships) and evaluate them in relation to health equity metrics in the population served. This commentary provides a rationale for future quality improvement efforts to define and measure transparency and accountability so researchers can study the population health impact of enhancing these principles in health care.

**Health equity**

**The Community Impact of Research Abuses in Early Psychedelic Research** Kellen Saxberg*
Kellen Saxberg Dana Strauss Monnica Williams

Western psychedelic research has a history of systematic mistreatment of marginalized and racialized groups, particularly incarcerated Black Americans. The Addictions Research Center in Lexington, Kentucky conducted unethical experiments using Lysergic acid diethylamide (LSD) and other psychedelics on people of colour for almost 30 years from 1947 to 1974. During this time, Black prisoners with substance abuse issues were routinely exploited. This study aims to understand the impacts of this unethical human experimentation on the victims, their descendants, and the broader Black communities in Lexington. The study will take a community-based participatory research approach using 90-minute focus groups consisting of 5-10 participants each with the goal to discuss the details of the abuse and the ways in which it has impacted participants, their families, and their community. Data will be analyzed using thematic analysis. We expect the individuals and communities exposed either directly or indirectly to suffer from racial trauma and demand reparations. The affected individuals and communities have largely been ignored by researchers and the United States government. As a result, we also expect this study to provide a sense of validation and closure for the participants. This study will help to contextualize the underrepresentation of Black, Indigenous and people of colour in psychedelic research by highlighting how racial abuse, systemic racism, and Whiteness influences research. By centering the study on the experiences and desires of Black Americans, this research will empower the victims of these past abuses, moving psychedelic research in a more equitable direction.

**Incarceration and health**

### Unpacking Syndemics and Incarceration Among South Florida Residents Living with HIV

Felicia O. Casanova* Felicia O. Casanova Felicia O. Casanova

Justice involvement is syndemic with infection with HIV, mental illness, substance use, and exposure to violence; and mass incarceration is both a cause and consequence of US racial health disparities. The post-release period following confinement in prison or jail is a particularly vulnerable period for people who are formerly incarcerated. We conducted a qualitative oral life history calendar study, using in-person and Zoom interviews, to provide foundational knowledge of syndemic pathways and risk subjectivities for suboptimal HIV care among justice-involved persons living with HIV, and the social and structural contextual factors that shape these pathways. Of the twenty-four participants, 58.3% were male and 41.7% were female. 58.3% of the participants identified as Black, 12.5% as Latino, 25% white, and 4.2% as mixed race. 87.7% of the participants identified as heterosexual or "straight", 8.3% as gay, 4.2% as bisexual. Average age of participants was 51 and ranged from age 29 to 68 years old. Interviews were analyzed using thematic analysis. Preliminary thematic analysis indicated structural and social vulnerabilities, such as violence, lack of family and social support, housing, drug use over the life course, contributing to incarceration, HIV risk factors and care. The main time points participants were out of care were after diagnosis or after incarceration. Duration of being out of care ranged from one month to three years. Opportunities exist to improve coordination between HIV care and mental health services, as well as post-release healthcare and social service referrals.

**Infants/children/youth**

**Associations Between Adverse Childhood Experiences and Developmental Outcomes among Mississippi Children: An Exploratory Analysis of Novel Exposure Classifications** Rachel Tyrone* Rachel Tyrone Courtney Walker Caroline Compretta Jennifer Reneker Paul Burns Susan Buttross

**Background:**

Children exposed to adverse childhood experiences (ACEs) often have delays in motor, cognitive, and communication development. Previous cumulative measurement of ACEs have been utilized as a predictive exposure of future health. However, these measures are unable to describe how the intensity, duration, or timing of these exposures could impact health. Further investigation into the various potentially traumatic exposures is critical in understanding how ACEs lead to differences in childhood health and development.

**Objective:**

Examine the utility of a novel intra-familial and extra-familial classification of ACEs and the classification's relationship with developmental delays in a representative sample of Mississippi children.

**Participant and Setting:**

The Mississippi Child Health and Development Survey consisting of 1,016 children aged 0-71 months across Mississippi.

**Methods:**

An exploratory analysis was conducted utilizing logistic regression models to examine the association between the novel ACEs classification and developmental delays, controlling for child and parent demographic variables.

**Results:**

Children exposed to an intrafamilial adverse event and an extrafamilial adverse event were at risk for developmental delay. The adjusted odds of having a developmental delay increased when an intrafamilial adverse exposure was reported (OR= 2.15 95% CI 1.18, 3.95). The adjusted odds of having a developmental delay increased when an extrafamilial adverse exposure was reported (OR 2.83 95% CI 1.07, 7.51).

**Conclusions:**

Results of this study strengthen the evidence that ACE exposures place children at an increased risk for developmental delays. Early identification of these exposures is needed to assist families and children in navigating the available resources required to reduce the toxic stress effects of ACEs.

**Interventions/Programs**

**Change in Healthy Menu Item Sales Following the Development of Innovations using Human-Centered Design: Interrupted Time Series Analysis in Two Latin American Restaurants** Melissa Fuster* Melissa Fuster Charles Stoecker Margaret A. Handley Brian Elbel Terry T-K Huang

Working with an interdisciplinary team, we engaged two Latin American restaurants (LARs) in New York City using Human-Centered Design (HCD) to co-develop innovations to promote healthier eating, measured via increased sales of healthier menu items (HMI). One LAR added new HMIs (R1) and another LAR engaged in social media promotion of existing HMI (R2). This paper will present the outcomes of the collaboration and implications for the use of HCD in health promotion. We used interrupted times series (ITS) to examine changes in the daily quantity of HMI sold (measured using sales data) across three periods: Pre-pilot (12-weeks), Pilot (10-12 weeks), and Post-Pilot (12-weeks). In R1, the innovation increased HMI sales by 33.1 units (95% CI: 20.3,45.9, $p<0.001$) immediately, followed by a decrease in HMI sales of 0.62 units (95% CI: -0.87, -0.37, $p<0.001$). After the testing period ended, daily HMI sales increased by 0.48 units (0.25, 0.71, $p<0.001$). No significant changes in HMI sales were found in R2. The study demonstrated that the application of HCD for restaurant engagement is feasible, but with mixed results. HCD helped pinpoint the specific need of each restaurant and offered a co-creative process to identify and prototype a solution that addresses the need. The HCD collaborative process resulted in increased sales when the innovation entailed an increased HMI availability (R1) demonstrating demand for new HMIs and a business opportunity for LARs. While social media alone did not result in a significant change in R2, the partnership still provided valuable lessons for engaging small businesses in the community for health promotion. Future research is needed on the continued application of HCD approaches to promote healthy food access and address diet-related health inequities through improved food environments.

**Interventions/Programs**

**The Abundant Birth Project: A Case Study in Community Driven Research Practices** Erin Hubbard* Erin Hubbard Stephanie Arteaga Monica De La Cruz Jazzmin Williams Breezy Powell Sabra Bell Maile Chand Anjeanette Coats Esperanza Castillo Payshia Edwards Michaela Tayor Troy Roberts Solaire Spellen Zea Malawa Deborah Karasek Anu Manchikanti Gomez

*Objective*:

To center community and the experiences of Black and Pacific Islander women and birthing people during the formative design phase, implementation, and evaluation of a guaranteed income pilot program in San Francisco.

*Significance*:

The Abundant Birth Project (ABP) is the first guaranteed income program for pregnant people in the U.S. Designed to address Racism as the Root Cause (Malawa et al, 2021) of health and economic inequities, ABP provides an unconditional cash supplement to 150 Black and Pacific Islander women and pregnant people in San Francisco, communities that have experienced economic racism and face the greatest risk of birth inequities. Shared decision-making and community-centered practices in all phases of the program and evaluation can provide guidance for future research, especially for programs with precise impact on BIPOC communities.

*Methods*

In the formative phase of ABP program design, we sourced wisdom and recommendations through an interview-based needs assessment and two human centered design sprints among Black and Pacific Islander people with experience of pregnancy in San Francisco. Along with input from a regular working group of community members and advocates, this formative research informed the program design. Notably, our research team includes Community Researchers (CRs), Black and Pacific Islander women with lived expertise of pregnancy and parenting in San Francisco. With training in data collection and analysis, CRs have played integral roles in designing, conducting, and analysing the formative research. To maximize community involvement and shared decision-making, ongoing staff and working group meetings have designated spaces for CRs and community experts to advise ABP program implementation and evaluation design.

*Preliminary Results*

Our community-centered design and practices have contributed to high overall satisfaction among ABP participants, high survey response rates, and trust with community partners.

## LGBTQ+

**Effects of Discrimination on Sleep Quality: A Driver of LGBTQ Health Disparities** Tara McKay* Tara McKay Nathaniel Tran Nitya Kari Adam Conway

Background: Sleep is a critical protective factor for mental and physical health outcomes. Insufficient and low-quality sleep is linked to increased diabetes, cardiovascular disease, and cognitive decline. Recent theoretical work proposed that minority stress—including violence, discrimination, and stigma—may negatively affect sleep quality for LGBTQ and other minoritized populations. This study examines differences in sleep quality across sexual orientation and gender identity and tests the relationship between minority stress and sleep quality for LGBTQ adults.

Data: We use three data sources: 1) the Behavioral Risk Factor Surveillance System (BRFSS) for 8 states and the District of Columbia that administered the sleep quality question and the sexual orientation and gender identity module; 2) the UC Berkeley Social Networks Study (UCNets), a panel study of 21-30 and 50-70 year olds with an oversample of older LGBTQ adults; and 3) the Vanderbilt University Social Networks, Aging, and Policy Study (VUSNAPS), a panel study of older LGBTQ adults aged 50-76.

Methods: We estimate Poisson models predicting sleep quality as a function of LGBTQ identity and exposure to LGBTQ-related discrimination. Sleep quality is measured using three items available in all surveys: 1) the number of nights per week trouble falling asleep, 2) number of nights per week trouble staying asleep, and 3) number of mornings per week waking well rested. LGBTQ identity includes participants who are transgender and/or gay, lesbian, bisexual, or something else in all surveys. Experiences of LGBTQ-related discrimination in the last year were measured using the Daily Heterosexist Experiences Questionnaire (Balsam, Beadnell, and Molina, 2013) in UCNets and VUSNAPS.

Results: Sexual orientation and gender identity are significantly associated with all sleep quality measures in BRFSS and UCNets. Among LGBTQ adults in UCNets and VUSNAPS, sleep quality declines as the number and intensity of recent experiences of discrimination increase.

Conclusion: Differences in sleep quality by sexual orientation and gender identity are robust across data sources. Among LGBTQ adults, poorer sleep quality is strongly associated with recent experiences of discrimination. Poorer sleep quality may be an underlying mechanism exacerbating health disparities across sexual orientation and gender identity.

**Life-course/developmental**

**An apparent 'J-shaped' curve remains in the association between alcohol intake and health: Findings from the national and longitudinal Add Health data** Muntasir Masum* Muntasir Masum Jeremy Staff Jennifer Maggs

Is there still a J-shaped relationship between alcohol consumption and health? Numerous observational epidemiologic studies suggest a J-shaped relationship between alcohol intake and health for light/moderate drinkers, while lifetime abstainers constitute the referent group. However, Griswold's (2018) recent systematic review concluded that "there is no safe level of alcohol consumption." This study aims to determine whether there is a J-shaped association between binge drinking frequency (never-binge as a referent category) and the risk of poor self-rated (SRH) and mental health (MH) in adulthood. The purpose is to inform individuals about how they can make more informed health decisions.

In the study, we used data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), a longitudinal study of a nationally representative sample of adolescents in grades 7-12 during the 1994-95 school year. Self-reported binge drinking frequency and health outcomes were measured at wave V (age 32-43). Early life exposures (wave 4 or earlier) – adverse childhood experiences, socioeconomic status, and alcohol and substance use disorders – were used to predict health outcomes, with multiple imputations to account for missing data and participant attrition (N = 10,914).

The odds of poor SRH and MH were significantly higher for people who abstained (OR=1.33 [1.06,1.66]), and heavy binged (OR=1.73 [1.10,2.72]) versus people who never binged, providing evidence for the J-shaped relationship. In adulthood, children with adverse childhood experiences are more likely to have poor SRH and MH. Having a higher socioeconomic level lowers the odds of poor health outcomes later in life. Alcohol and substance use disorders are also predictive of poor health.

Binge drinking is a robust predictor of poor adult health, net of key confounders. These findings support the J-shaped association and call for preventive interventions, policies, and programs early in life to ensure better health in later life.

**Health Across the Life Course at the Intersection of Class, Race, and Gender** Emily Dore*
Emily Dore Irene Browne

**Research Questions:** Are the effects across the life course of racism, sexism, and classism additive or multiplicative (i.e. intersectional), and is there evidence of diminished returns on Black adult health from childhood socioeconomic status (SES) that parallels the evidence of diminished returns from adult SES?

**Significance:** Research shows a strong relationship between childhood conditions and adult health, but few studies examine this relationship through an intersectional lens. This study builds on these studies in three ways: 1) examining health outcomes at the intersection of three identities, 2) assessing race and gender intersections with childhood SES separately from adult SES, and 3) analyzing a comprehensive set of health outcomes including measures of physical and mental health, as well as biomarkers.

**Methods:** Logistic and linear regression models estimate the relationship between childhood SES, race, and gender on several older adult health outcomes using the National Health and Aging Trends Study. Along with main effects, the models test interactions between childhood SES and race, childhood SES and gender, race and gender, and childhood SES, race, and gender.

**Preliminary Results:** The models show evidence for the main effects of childhood SES, race, and gender in the expected directions for most health outcomes, but only limited evidence for the interactions.

**Conclusion:** This study finds support that intersectionality is mostly conditional, as there was little evidence for interactions between class, race, and gender on older adult health. Nonetheless, it is important that even though there are few interactions, there were substantial additive effects on health. The most privileged groups were consistently less likely to report or exhibit poor health compared to the least privileged groups. Additionally, these findings suggest little support for diminished returns from childhood SES, which contrasts with literature on diminished returns from adult SES.

**Mental health/function**

**The Association Between Food Insecurity and Suicide Ideation: The Mediating Roles of Stress and Social Isolation** Carlyn Graham* Carlyn Graham Gabriele Ciciurkaite

A burgeoning body of research has investigated food insecurity vis-à-vis its relationship to suicidal thoughts and behaviors among diverse populations of adults. Irrespective of the population considered, results from these studies unanimously agree that food insecurity heightens the risk of suicidal thoughts and behaviors. However, to date, research has yet to explore potential mechanisms that may undermine the relationship between food insecurity and suicidality. Food insecurity is associated with stress and social isolation, two factors that increase the risk of suicidal thoughts and behaviors. Using 2008 data from Wave IV of the National Longitudinal Study of Adolescent to Adult Health (Add Health), we use structural equation modeling to explore the relationship between food insecurity and suicide ideation and determine whether stress and social isolation mediate this relationship among a nationally representative sample of young adults between the ages of 24 and 32. We find that food insecurity is associated with suicide ideation and this association is partially mediated by stress and social isolation. Our findings help further understand the complex relationship between food insecurity and suicidality and highlights the need for policy and interventions that would help to promote mental well-being among food insecure individuals.

**Mental health/function**

**Prevalence and correlates of suicidal ideation among adults attending chronic care clinics in Malawi** Josée Dussault* Josée Dussault Kazione Kulisewa Esther Kip Jullita Malava Chifundo Zimba Sylvia Kaaya Michael Udedi Bradley Gaynes Mina Hosseinipour Brian Pence

**Background**: Suicide is a public health priority with increasing incidence. In Malawi, approximately 7% of the adult population experienced suicidal ideation (SI) in 2017. This cross-sectional study aims to describe the prevalence and correlates of SI among patients attending chronic care clinics in Malawi.

**Methods**: Patients were screened in 10 NCD clinics across Malawi from April 2019 to November 2021. Eligible study participants were 18-65 years with diabetes or hypertension and scored ≥5 on the patient health questionnaire (PHQ-9). Participants who had a prior history of a psychotic disorder or showed emergent risk of self-harm at screening were excluded. SI was indicated by a positive response to the ninth item of the PHQ-9 during the baseline interview. If a participant indicated SI, they completed a suicide risk assessment (SRA). To assess correlates of SI, presence of SI was regressed onto other covariates using an OLS model in Stata.

**Results**: Of 944 participants, 753 (80%) were female and 141 (15%) reported SI. SRAs were completed for 117 (83%) SI cases, and 51 (44%) were considered active risk. Participants with greater wealth were less likely to report SI. Anxiety symptoms, poorer health-related quality of life, and physical intimate partner violence all increased the probability of reporting SI. Number of recent stressful life events, coping behaviors, and social support were not associated with SI in our study. Sub-analyses did not identify any correlates that distinguished active SI cases from passive cases.

**Conclusion**: Among patients with diabetes or hypertension and depressive symptoms in Malawi, SI was common and more prevalent than in the general population. While most SI cases were passive, no covariates distinguished them from active cases. More research is needed to understand differences between people experiencing passive versus active SI. Routine SI screening and linkage to specialized care continue to be important tools for suicide prevention.

**Methodological approaches to studying public health**

**The Disembodied Practice of Numbering: Quantification and Absent Categories of Racial Difference in Health Science** Pyar Seth* Pyar Seth

During the nineteenth century, Frederick Ludwig Hoffman and his text, Race Traits and Tendencies of the American Negro, were praised for their statistical brilliance. An actuary tasked with proving (un)insurability, in his 1896 treatise, Hoffman centered his research on the central social preoccupation of the century: the welfare and social role of the Negro. He compared the mortality rate of Black people and white people across localities and the comparison was dismal, illustrating a Black morality rate that was consistently double that of the white population. Ultimately, Hoffman read the high Black mortality rate as evidence that "the vitality of the Negro race must be called into question" (Hoffman, 1897). Though the data Hoffman collected on mortality and disease were chilling, what is disembodying here is the fact that Hoffman and the insurance industry seemed to focus exclusively on Black people for the creation of a new risk management narrative but, in turn, accepted and solicited other people with a similar or an even higher mortality rate. The insurance industry needed a measurement of risk that was productive rather than merely representational because opposition to life insurance policies seemed to be on the rise. And so, in the paper here, I intend to demonstrate how the work of Hoffman, though freely deployed with great assurance, as if everything on Blackness is precisely defined and well-known, was not only racist but an etymological excise. The de-contextualization and delinking of language from historically and socially grounded phenomena was a medium through which Hoffman could elicit variation and enable racism, confusion, and vagueness to work collaboratively with one another. Variation was meant to be incorporated into hegemony, not disruptive of it, and calculate a new "ambiance of sociality" (Clough, 2016).

## Methodological approaches to studying public health

**An Investigation of the Measurement Properties of the Hispanic Stress Inventory in the Hispanic Community Health Study/Study of Latinos Sociocultural Ancillary Study** Adam Lilly* Adam Lilly Krista Perreira Linda Gallo Christy Avery

Psychosocial stress is an important mental health outcome in population health science and a mediator through which social conditions influence health. Acculturative stress, which arises due to conflicts between an individual's culture of origin and their current cultural environment, is a form of stress particularly relevant to assess in immigrant populations. The Hispanic Stress Inventory (HSI) was developed to measure acculturative stress in Hispanic/Latino individuals, but its measurement properties have received less attention than other measures used to assess psychosocial stress. We used confirmatory factor analysis to compare five measurement models for acculturative stress. Indicators came from a shortened version of the HSI and data from the Hispanic Community Health Study/Study of Latinos Sociocultural Ancillary Study. Item wording is in Table 1. The models tested include two correlated factor models with two (Fig. 1) and five dimensions (Fig. 2), two bifactor models with two (Fig. 3) and four specific factors (Fig. 4), and a higher order factor model with four first order factors (Fig. 5). The two-dimensional models included intrafamilial and extrafamilial stress and the five-dimensional model included immigration, occupational/economic, cultural/family, parental, and marital stress. The four-dimensional models dropped the marital dimension because it was only measured by one indicator. Fit statistics for each model are in Table 2 and factor loading estimates are in Tables 3-7. We plan to estimate the model-based reliability of the HSI, conduct measurement invariance tests by language of survey administration and Hispanic/Latino background, and assess convergent validity of the HSI by estimating its association with general perceived stress, acculturation, and chronic stress burden. Preliminary results suggest that the five-dimensional correlated factor model displays the best fit with room for improvement.

**Methodological approaches to studying public health**

**Time series models for public health surveillance: Racial-ethnic inequalities and colorectal cancer prevention priorities** Connor Donegan* Connor Donegan Amy E Hughes Simon C Lee

Monitoring time-varying disease and mortality risk with population surveillance data is core to population health research, and a variety of methods are available to complete this task. Joinpoint regression modeling is the method of choice for many, but its inferential shortcomings include linearity constraints and over-confident standard errors. Bayesian modeling is highly attractive in general, but implementation typically requires specialist knowledge and niche programming skills.

This presentation introduces surveil, an R package providing an accessible interface to Bayesian time series models for public health surveillance research. The package provides models for count data (e.g., group-stratified disease counts and population at risk) and methods for transforming model results into probability distributions for age-standardized rates, cumulative and period percent change, and measures of inequality such as rate ratios, rate differences, excess cases, and Theil's index, a measure of inequality across multiple groups or for multiple groups nested within discrete geographies. The package also produces publication-quality, customizable data visualizations.

Motivating the project is an analysis of colorectal cancer (CRC) incidence by race-ethnicity, ages 50-79, in four Texas metropolitan areas. We find persistent Black-White inequality in age-standardized risk and evidence that general progress in CRC prevention has stalled. CRC risk for urban Blacks declined 31% (95% CI: -37, -25) from 1999 to 2018; Black-White inequality (rate ratio *and* rate difference) increased from 1999 to 2008 before falling somewhat. Had Black age-specific risk (five-year groups) equaled that of Whites each year, 3,982 (3740, 4,219) CRC cases—28% (29, 32) of total Black CRC incidence—would not have occurred.

By ease of use, surveil aims to accelerate analyses of health data to help researchers, health agencies, and the public set priorities and monitor outcomes.

**Migration**

**No Safe Spaces: The systematic re-traumatization of immigrant survivors of domestic violence in the United States** Sameera Nayak* Sameera Nayak Collette Ncube John Griffith Beth Molnar

**Background:** Immigrants are especially vulnerable to domestic violence (DV) victimization. This mixed-methods study examines structural barriers to the health and wellbeing of immigrant DV survivors by assessing the impact of the sociopolitical immigration climate on DV systems and survivors' lives.

**Methods:** Data come from five semi-structured focus groups (n=31) with frontline workers who work with immigrant survivors and a survey of immigrant survivors (n=50) who sought services from a DV agency in Massachusetts. We used thematic analyses to identify themes across focus groups data and logistic regression analyses to examine associations between immigration policy vulnerability and mental health outcomes in the survey data.

**Results:** We identified five themes to contextualize structural barriers for immigrant survivors: 1) The immigration policy climate has lasting impacts on immigrant survivor's lives, 2) Existing avenues for immigration relief are inadequate and cause avoidable suffering, 3) Multilevel embedded racism and xenophobia manifest to disenfranchise survivors, 4) Survivors' experiences with these systems shape self-worth, mental health, and healing, and 5) Gaining more secure status has positive and widespread effects on survivors. Alongside this, results from the survey indicate that perceiving higher levels of immigration policy vulnerability on the Perceived Immigration Policy Effects Scale is associated with clinically significant depression and anxiety among survivors. Perceiving more elevated levels of social exclusion is associated with a higher likelihood of screening positive for clinical depression and anxiety in separate models.

**Conclusion:** Current systems, in the way they operate, are sites of dehumanization and re-traumatization for immigrant DV survivors and can adversely impact survivors' mental health and wellbeing. Targeting these systems can have far-reaching potential to improve health outcomes for immigrant survivors on a large scale.

**Migration**

**Effects of migrant remittances on the health of individuals who receive them: A systematic scoping review** Sharon H. Green* Sharon H. Green Hawi Teizazu Yao Lu Jennifer S. Hirsch

***Rationale***: Migrant workers sent nearly $530 billion in remittances to individuals in their sending countries in 2018. Flows of migration and remittances are changing due to COVID-19, income inequality, globalizing markets, and climate change, making it is increasingly important to understand the effects of remittances and how their impacts vary under different circumstances.

***Objective***: This systematic scoping review aims to map the literature on the health effects of receiving monetary remittances from migrants.

***Methods***: The study reviewed the literature on migration, monetary remittances, and health published in peer-reviewed journals. It identified relevant studies and documented patterns in the effects of remittances.

***Results***: Of the 93 included studies, most found that remittances had positive effects on the health of recipients. Remittances had the most pronounced effects in areas without adequate resources and social protections. They improved physical health by enabling households to pay for healthy food, medical treatment, and housing, and they improved mental health by easing financial constraints. However, some studies found that remittances did not improve physical health and that remittances had adverse effects on mental health. Remittances tended to benefit parents of migrants more frequently than spouses or children, to increase access to and utilization of health care more frequently than improving other health indicators, and were more likely to have beneficial effects when they occurred frequently, regularly, and persistently.

***Conclusions***: Remittances play an important role in improving health outcomes in migrant families, particularly in sending areas with limited resources and social protections. These findings suggest that policies that facilitate the transfer of remittances can maximize their health benefits, particularly for aging populations. Future research should examine how migration and remittances shape long-term health and provide additional evidence on the pathways through which they operate.

**Mortality**

**Obesity-Related Deaths: Variation in the Burden on U.S. Life Expectancy Estimates Across Coding Schemes** Andrea Tilstra* Andrea Tilstra José Manuel Aburto Iliya Gutin Jennifer Dowd

High and rising rates of obesity in the United States highlights a need for consistent estimates of obesity-related mortality and its burden on life expectancy. We use U.S. multiple cause of death data and population estimates for the Black, white, and Latino population in the years 2010, 2015, and 2020. We identify five International Classification of Diseases (ICD) -10 coding schemes for estimating obesity-related mortality. In sex- and race/ethnic-stratified analyses, we estimate the potential years of life expectancy lost if obesity-related mortality had not occurred. Results suggest that obesity-related mortality may be contributing to up to 78 months (6.5 years) of U.S. life expectancy, though estimates range as low as 0 months, with a median contribution across ICD-10 coding schemes of about 20 months (1.7 years). Despite substantial variation across coding schemes, obesity-related mortality consistently contributes more to life expectancy among Black Americans than white and Latino Americans. Under the analyzed ICD-10 coding schemes, the age pattern of obesity follows a J-shaped curve, suggesting exponential increases in obesity-related mortality after age 25. Our results show that the estimation of the burden of obesity-related mortality on life expectancy in the United States varies widely across causes of death used in analyses. We propose that future analyses of obesity-related mortality follow consistent ICD-10 coding.

**Neighborhood density of destinations is associated with post-stroke outcomes** Leanna Delhey* Leanna Delhey Lynda Lisabeth Lewis Morgenstern Xu Shi Erin Case Melinda Cox Devin Brown

**Objective**: Assess if neighborhood destination density is associated with post-stroke outcomes.

**Methods**: Non-Hispanic Whites and Mexican Americans (MAs) with incident ischemic and hemorrhagic stroke (2009-2019) were ascertained from a population-based surveillance cohort in south Texas (Brain Attack Surveillance in Corpus Christi [BASIC] project). The exposure was destinations (e.g., community centers and businesses) per square mile of the census-tract from the National Neighborhood Data Archive. Outcomes at 90 days included disability (activities of daily living (ADL)/instrumental ADL (IADL) score, range 1-4, lower better), cognition (Modified Mini-mental State Exam (MSE), range 0-100, higher better), depressive symptoms (Patient Health Questionnaire-8 (PHQ-8), range 0-24, lower better), and quality of life (abbreviated Stroke-Specific Quality of Life scale (SS-QOL), range 0-5, higher better). We applied inverse probability weighting and multiple imputation and fit linear mixed models for each outcome adjusting for neighborhood socioeconomic factors and individual traits.  Stroke severity (NIH Stroke Scale, ≤5: mild, >5: moderate-severe) was assessed as an effect modifier.

**Results**: The sample (N=1,299) was 45-95 years old (median=64, interquartile range (IQR) 56-73), primarily male (53.6%) and MA (62.9%). Among those with moderate-severe stroke, destination density (median=41.48, IQR 16.98–72.55) was associated with more favorable disability (mean difference in ADL/IADL comparing 75th to 25th percentile= -0.12; 95% CI -0.25, 0.00), cognition (mean differences in MSE=1.71, 95% CI 0.05, 3.37), and quality of life (mean difference in SS-QOL=0.17; 95% CI -0.02, 0.32) and was not associated with depressive symptoms. These associations were not observed among those with mild stroke.

**Conclusions**: Among moderate-severe stroke-survivors, residing in neighborhoods with a greater density of destinations may benefit recovery. Future research should consider the likely mechanisms.

**Race/Ethnicity**

**Racial/Ethnic Differences in Wealth Components and Physical and Mental Health Among US Young Adults** Sicong Sun* Sicong Sun Darrell Hudson Hedwig Lee

Background. Financial Capability and Asset Building (FCAB) programs and policies have the potential to improve individual and families' health and wellbeing. This paper examines how US adults' wealth components (e.g., financial assets, nonfinancial assets, secured debt, and unsecured debt) at age 30 are associated with physical and mental health at ages 30–36, as well as if the associations differ by race/ethnicity.

Methods. Data were obtained from the National Longitudinal Survey of Youth 1997. Health outcomes were measured by mental health inventory and self-rated health in 2015. Wealth components—including financial assets, nonfinancial assets, secured debt, unsecured debt, housing value, and homeownership—were measured when respondents were aged 30. Logistic regressions and ordinary least square regressions were used to assess the association between wealth components at age 30 and physical and mental health in 2015.

Results. Financial assets and secured debt were positively associated with self-rated health and mental health. Unsecured debt was negatively associated with mental health only. Racial/ethnic heterogeneities exist in these associations. Financial assets were positively associated with self-rated health and mental health inventory; however, the positive associations were significantly weaker for non-Hispanic Black respondents. Unsecured debt was protective of self-rated health for non-Hispanic Whites only. For respondents of color, unsecured debt was negatively associated with self-rated health. For Black, young adults, unsecured debt had more severe negative health consequences compared to other racial/ethnic groups.

Conclusion. This study provides a nuanced understanding of the complex relationship among race/ethnicity, wealth components, and health. Findings could inform asset building and financial capability policies and programs to reduce racial health inequality most effectively.

**Race/Ethnicity**

**Development and implementation of a culturally relevant social media campaign to address lung cancer screening among Chinese Americans** Yi-Ling Tan* Yi-Ling Tan Stella Chong Binh Luu William Tsai Judy Ah-Yune Jamie Love Simona Kwon

**Background**: Lung cancer is the second and fourth most common cancer diagnosed among Chinese American men and women respectively. Screening can detect lung cancer in its early, most treatable stages. In 2022, the US Preventive Services Task Force (USPSTF) expanded their annual lung cancer eligibility criteria. Despite the disproportionately high rates of lung cancer among Chinese Americans, prior research suggest that screening rates in Chinese Americans remain low due to complex and systemic barriers.

**Objective:** We seek to describe the development of a culturally and linguistically relevant campaign to provide education and outreach on lung cancer screening for Chinese Americans.

**Methods**: The project was guided by the principles of participatory cultural adaptation and social marketing to develop sustainable education and outreach efforts and identify appropriate messaging and channels. This included a scoping review focusing on barriers to lung cancer screening in Chinese Americans and a survey of Chinese-serving physicians. A transdisciplinary advisory group guided the development and implementation of the campaign. We leveraged existing regional and national networks to maximize the outreach to Chinese American communities across the US.

**Results**: We developed the following: 1) a culturally tailored social media campaign to raise awareness of the eligibility criteria for lung cancer screening and address barriers toward screening in Chinese Americans; 2) a website with information and resources for Chinese Americans, including an eligibility quiz and videos; and 3) materials for physicians. We will share the cultural adaptation process and present data on the reach of the social media campaign.

**Conclusion:** There is a need to develop culturally and linguistically relevant education and outreach efforts to actively promote lung cancer screening and address barriers to screening among high-risk Chinese Americans, in order to reduce lung cancer disparities.

**Race/Ethnicity**

**Racial/Ethnic Differences in Social Contact Patterns and Implications for COVID-19** Audrey Dorelien* Audrey Dorelien Ashwini Shridhar

COVID-19 has devastated Black, Hispanic, and Indigenous communities in the United States. These disparities are primarily driven by unequal infection risk. Since COVID-19 is primarily transmitted through close person-to-person contact, it is important to study how and why inter-personal contacts vary by race and ethnicity. We analyze racial/ethnic differences in duration of social contacts (risk factor for covid exposure) between 2019 and 2020 using the American Time Use Survey (ATUS) data. We analyzed to what extent differences are driven by variation in household, workplace, and community contacts.

Overall, we find that on average, households spent 56 fewer minutes in the presence of others in 2020 compared to 2019. Individuals are substituting time spent with others in workplace and public locations with time spent at home with household members. Duration spent at home with others increased for all ethnic/race categories in 2020. However, Non-Hispanic Black barely increased time spent at home with others (7-minute increase); in contrast the increase was greatest for Hispanic (19%, 41 minutes) and Non-Hispanic Other (30% or 58 minutes) respondents. We will conduct additional analyses to study to what extent household composition (size, age composition...) help explain these racial/ethnic differences.

In our analysis of employed individuals working on diary day, we find that **even after controlling for occupation there are large differences in duration of social contacts**. Black and Hispanic workers have higher duration of social contacts than White workers in 2019 and 2020 and the difference increased during the pandemic. We plan to test whether the within-occupation differences in social contacts may be driven by employer discrimination, using county level measure of racism as a proxy.

While the pandemic significantly changed social contact patterns overall, this change was not the same across groups. Racial differences in infection rate may be driven by differences in contact patterns, especially in the workplace and home.

**Race/Ethnicity**

**Clinical Trial Knowledge, Perceptions and Trust among Black and White Adults in the United States** Anna Buckley* Marino Bruce Bettina Beech Roland Thorpe

Background: Low clinical trial participation among underrepresented populations has often been attributed to limited knowledge about clinical trials and mistrust or distrust of scientists. The two aims of this study were to: (1) examine knowledge of and perceptions about clinical trials and their association with trust in biomedical research; and (2) assess the degree to which these associations vary by race.

Methods: Data for this study were drawn from a convenience sample of adults in the United States who responded to a one-time web-based, self-administered survey. The outcome of interest was a trust index derived by summing of responses to 12 questionnaire items about participant trust in biomedical researchers. The primary independent variables were knowledge and perceptions of clinical trials. Seven (7) and eight (8) questionnaire items were used to create the knowledge and perception indices respectively.

Results: Fifty-nine percent of the analytic sample was female and 38.2% of respondents were Black. Black respondents had significantly lower clinical trial perception scores (23.0±5.4) than their White peers (24.1±5.4) on average. Pooled regression results indicated that clinical trial perception was associated with participant trust (b=0.40, 0.73). Findings from race-specific regression models indicated that clinical trial knowledge (b=-0.38, 0.15) and perception (b=0.42, 0.13) were associated with participant trust among Black respondents. Results from the regression model for White respondents were like the pooled model.

Conclusion: Our findings suggest that the racial gap in clinical trial knowledge and perceptions may be closing; however, their respective associations with trust still vary by race. Clinical trial awareness and education interventions are needed to engender positive perceptions about research and greater trust among potential research participants.

**Reproductive health**

**Racial disparities in longitudinal trends in episiotomies in the US** Parvati Singh* Parvati Singh Maria Gallo Kathryn Lancaster Courtney Lynch

Routine use of episiotomy, defined as an incision made in the perineum during childbirth, is now widely discouraged by organizations such as World Health Organization and, in the U.S., the American College of Obstetricians and Gynecologists (ACOG). Given substantial evidence of poor maternal health outcomes postpartum and limited utility towards prevention of vaginal tears during childbirth, ACOG issued advisories in 2006 and 2008 against the routine provision of episiotomy. Between 2000 and 2011, episiotomies in hospital childbirths exhibited a 60% decline nationwide (from 24% in 2000 to 10% in 2011). While the overall trend is encouraging, it is important to examine use of episiotomy by race/ethnicity to ensure that women of all race/ethnicities are benefiting equally from this reduction. We test whether the decline in the practice of routine episiotomy exhibits a slower pace for African American birthing persons relative to white persons. We use nationally representative data from the National Inpatient Sample (NIS) comprising 47 states over 12 years (2000 to 2011) to examine whether the ratio of episiotomies to all hospital child births (outcome) exhibits a positive slope over time among African American women relative to white. We define our exposure as the interaction of race/ethnicity indicator variable with linear time. Linear regression analyses control for state fixed effects, insurance groups, high school education, per capita public health spending, income inequality (Gini index) and percentage of population on Medicaid. Results indicate that over our study period, there were 5.4 additional episiotomies per 1000 hospital child births among African American birthing persons each year, relative to white (coefficient of interaction term = 5.5, 95% confidence interval = 3.9, 6.8). The disparity in episiotomies between African Americans and whites widened over time. These findings provide evidence of racial disparities in medical practices during childbirth in the US.

**Reproductive health**

**Assessment of the joint effects of perceived racial discrimination and a lack of neighborhood safety on hypertensive disorders of pregnancy** DaShaunda Taylor* DaShaunda Taylor Emily Zimmerman Karen Hendricks-Munoz Robert Perera Derek Chapman

Hypertensive disorders of pregnancy (HDP) occur in 5-8% of pregnancies among reproductive-age women in the United States. Recent trends indicate a rise in HDP nationwide, and modifiable social contributors, such as perceived racial discrimination (PRD) and a lack of neighborhood safety, may exacerbate this outcome. This study assessed the individual and joint effects of PRD and perceived lack of neighborhood safety on HDP. Cross-sectional multistate data from the Pregnancy Risk Assessment Monitoring System (2009-2018) were utilized. Bivariate associations were evaluated using Chi-squared analyses. Multivariable logistic regression was used to examine joint effects on the multiplicative scale, while the relative excess risk due to interaction (RERI) assessed joint effects on the additive scale. The prevalence of HDP in the study sample (N=31,575) was 7%, while 8% of women experienced racial discrimination and 9% reported living in an unsafe neighborhood. Approximately 2% of study participants experienced both exposures. Neither PRD [odds ratio (OR): 0.84, 95% confidence interval (95% CI): 0.62, 1.14] nor a lack of neighborhood safety (OR: 0.89, 95% CI: 0.69, 1.15) were associated with HDP, and there was no apparent joint effect of these factors on HDP (OR: 0.91, 95% CI: 0.53, 1.57). However, both measures of interaction on the multiplicative and additive scales were in the expected direction. There were significant differences in the prevalence of HDP, PRD, and a perceived lack of neighborhood safety by race/ethnicity, with higher percentages of Black women experiencing the exposures and outcome. Although PRD and a lack of neighborhood safety were not associated with HDP in this study, it is imperative to recognize that many women still experience either PRD or living in an unsafe environment during pregnancy. Findings from this study provide evidence that a racial disparity in HDP exists and that PRD and lack of neighborhood safety may contribute to this disparity.

**Socioeconomic status**

**Prevalence and risk factors of food insecurity among Californians during the COVID-19 pandemic: disparities by immigration status and ethnicity** Alein Haro-Ramos* Alein Haro-Ramos Adrian Bacong

**Background**: COVID-19 has exacerbated disparities in food insecurity among marginalized communities. To date, however, no study has examined the heterogeneity in experiences of food insecurity within immigration status and ethnicity in the context of the COVID-19 pandemic.

**Objectives**: We examine heterogeneity in food insecurity by ethnicity and immigration status among Asians and Latinos in California during the COVID-19 pandemic. We determine the extent to which pandemic-related economic stressors and socioeconomic position (SEP) explain disparities in food insecurity across immigration-ethnicity categories.

**Methods**: We used the 2020 non-restricted California Health Interview survey (n = 19,514). We categorized Asians and Latinos as US-born, naturalized, and non-citizens (lawful permanent residents, undocumented and DACAmented persons, students, refugees, and temporary workers). Multivariable weighted logistic regression analyses assess the relationship between immigration status-ethnicity and food insecurity, adjusting for key covariates. Decomposition analysis is used to determine the extent to which SEP and pandemic-related economic stressors explain disparities in food insecurity by immigration status-ethnicity.

**Results**: Latinos, regardless of immigration status, and non-citizen Asians reported greater food insecurity across all models. SEP accounts for 43% to 66% of the overall association between citizenship-race and food insecurity. We found a marginally significant mediation (b = .07, p < .087) of COVID-19 economic stressors on food insecurity for non-citizen Latinos only.

**Implications**: While the COVID-19 pandemic has exacerbated economic hardship for marginalized groups, our results suggest that long-standing SEP-related factors among non-citizen Asians and Latinos, regardless of immigration status, primarily explain food insecurity. State and local policymakers should extend social assistance programs and COVID-19 economic relief to non-citizens, including undocumented. A path to citizenship can improve access to quality employment and better life opportunities for non-citizen immigrants at the federal level.

**Structural factors**

**Investigating the influence of socio-contextual factors on working conditions, worker health, and client care in addiction treatment facilities: A qualitative analysis** Elisabeth Stelson* Elisabeth Stelson Lauren Sabbath Glorian Sorensen Laura Kubzansky Lisa Berkman Erika Sabbath

**Background**: The marked rise in substance use has strained addiction treatment services, especially nonprofit safety-net services. Researchers predict the U.S. will fall 250,000 workers short of the addiction treatment providers (ATPs) needed to meet treatment demand by 2025. The emotional and physical health toll of the work may contribute to workforce attrition and shortages. The aim of this community-initiated qualitative study was to identify factors that affect organizational, ATP, and client health and wellbeing as well as the pathways between these constructs from the perspective of the ATP workforce.

**Methods:** ATPs (executive leadership, middle management, and direct service providers) in nonprofit residential addiction treatment facilities in Massachusetts were purposively recruited according to role and geography for semi-structured interviews and focus groups. Coding was facilitated using NVivo 12. Two researchers independently coded 25% of transcripts. Interrater reliability was calculated with the Kappa statistic (mean =0.82).

**Results:** ATPs (N=49) participated in 33 interviews and 4 focus groups. Analysis of transcripts revealed socio-contextual factors external to residential facilities as having a dominant influence on working conditions, worker health and wellbeing, staff turnover, and client care. Four primary contextual themes related to these factors surfaced:1) changes in substances and client needs not met with shifts in treatment practices; 2) challenges balancing state requirements and state-provided resources; 3) effects of structural discrimination and addiction stigma on ATPs pay and professional advancement; and 4) effects of geographic location of facility on ATP work and quality of life.

**Conclusion**: Protecting the health and well-being of ATPs is critical for improving addiction treatment in the larger population. From the perspective of this workforce, socio-contextual factors generate downstream effects on and feedback loops between working conditions, worker health, turnover, and client care. Interventions to improve treatment outcomes or working conditions must consider state reimbursement policies and structural barriers to professional advancement for ATPs, many of whom are in addiction recovery themselves.

**Structural factors**

**Costs and coping for food industry workers during the Coronavirus pandemic** Elizabeth Koselka* Elizabeth Koselka Elena Ronda Pérez

The Coronavirus pandemic exposed legacies of deep inequality, including who could afford protection from exposure. Although essential work long pre-dates Covid-19, economic shutdowns to curtail outbreaks in 2020 temporarily rendered conditions of essential work highly visible. Food industry workers were among who needed to continue in-person work throughout the pandemic; consequently, their work and the lives they lived while working were repeatedly overhauled. This study gathered first-hand perspectives from people employed in the food industry about their experiences working through the pandemic. 34 open-ended phone interviews were conducted from May through September 2020 with people who grew (2), processed (5), cooked (9), sold (17), and/or delivered (5) food in the United States. Audio recordings were transcribed and coded using Atlas.ti8.4 for themes of workplace change, safety, stress and health since the pandemic began. Qualitative analysis showed that food industry workers were resilient in the face of instability. Interviewees described significant setbacks from income loss; inability to plan ahead; concern about getting themselves or loved ones sick; and overburdening. They went to work because there was no alternative. Fleeting or delayed support from employers or state/federal agencies was unsurprising to study participants, who had dealt with these difficult conditions for years. When asked to reflect on their health and safety, responses varied; that is, interviewees who experienced racism and/or sexism described greater risk and cost. These findings align with similar investigations into food workers' limited protections and low wages, many of which predate the pandemic. Results of this study advocate for better workers' support systems, and may guide future research priorities as we continue to understand social and health impacts of Covid-19.

**Structural factors**

**Melting the ICE: how migrant health equity requires an end to militant immigration policies and enforcement** Gregory Rogel* Gregory Rogel

Population Health Science, specifically a social determinants of health approach, has investigated how immigration enforcement efforts, like raids, negatively impact the health of migrant communities. Recent studies demonstrate how raids affect migrant's mental health through chronic stress and threats of family separation. Others demonstrate the immediate and long term physical and mental health problems raids have on children. There is even some evidence to suggest that raids lead to negative birth outcomes for Latina mothers. While this work is incredibly important for identifying health inequities facing migrant communities, I argue that addressing these inequities requires collaboration with political and legal scholars. If we are to advance population health equity, then we must investigate not just the social determinants themselves (e.g., raids). In addition, we must investigate how our social & political reality creates the conditions for migrant health inequity. The raids are not the root cause but a symptom of a larger political structure. This structure creates tough immigration laws then it creates enforcement agencies (e.g., ICE). This agency, shielded by nationalism as well as by favorable Supreme Court rulings (e.g., INS v. Lopez-Mendoza), abuses its power through use of force and intimidation to achieve its objectives. If we are to address these health harms, then we must address not only the raids themselves but also the legal & political structures that allow these practices to exist in the first place. This, I argue, will do more to advance health equity then targeted interventions. Structural problems require structural solutions. This methodological shift will better position us to accurately identify and remove the immigration policies and practices that directly contribute to migrant health inequity. If we want long-term solutions then we must be proactive, and not reactive. As the saying goes, "an ounce of prevention is worth a pound of cure."

**Structural factors**

**Every Week Matters: Impact of Weathering on Gestational Age of Black Infants.** Amanda Nickel* Amanda Nickel Alicen Spaulding Victoria Nguyen Tongtan Chantarat Rachel Hardeman

Early term birth, gestational age (GA) 37 – 38 weeks, is associated with increased risk of respiratory admission, gastroenteritis, breastfeeding difficulties, and hospitalization in early childhood. The Weathering Hypothesis asserts that the cumulative impact of social inequalities experienced by Black birthing persons "women" in the US leads to earlier decline in health status, negatively impacting gestation period. We hypothesized that Black, US-born women will on average have infants with lower GA than White women, and this disparity will increase with maternal age. We also hypothesized that Black, US-born women will on average have infants with lower gestational age than Black, immigrant women.

Birth records were obtained for all singleton live-births at five hospitals in the Twin Cities from 2014-2018. The primary outcome of interest was GA, measured to the nearest completed week. Predictors of interest were race (Black, non-Hispanic, White, non-Hispanic) and nativity (US-born, immigrant). Missing data were imputed using chained equations. We used mixed effects linear regression with random effects for census block group and individual to model the relationship between GA and race and nativity with an interaction for maternal age. Data is presented as predicted mean GA by race, nativity, and age standardized for the distribution of the confounders in the dataset.

The final study sample was 38,024 births. We found that across all age groups Black, US-born women had infants with lower GA than White, US-born and Black, immigrant women. This disparity increased across maternal age (see Figure 1).

There is evidence of Weathering, declining pregnancy health due to exposure to racism and social inequalities, among Black, US-born mothers. Although the risks of negative outcomes among early term infants are small, the number of children impacted is large. Even seemingly small disparities in gestational age distribution have significant impact on the population.

**Sex education and sexual risk behavior among adolescents and youth in the deep south: Implications for youth HIV prevention** Fei Teng* Paul Burns Angela Omondi

Background:
Adolescents and young adults represent the largest group of new HIV infections in the United States, especially in the South. Currently, 28 states mandate sex education and HIV education. 39 states and the District of Columbia require students receive instruction about HIV. Using the 2015 Mississippi Youth Risk Behavior Surveillance System (YRBSS), we examined the effect of abstinence-only until marriage (AOUM) sex education among a sample of youth ages 12-18 years on four HIV-related sexual risk behaviors.

Methods:
Using the 2015 Mississippi YRBSS, we examined the effect of AOUM sex education among a sample of youth ages 12-18 years. The independent variable was sex education. Four HIV-related sexual risk behaviors were the dependent variables, including 1) early sexual debut, 2) multiple sexual partners 3) drinking alcohol before sexual intercourse, and 4) condomless use. Covariates included age, gender, and race-ethnicity.

Results:
Compared to youth not enrolled in AOUM sex education, we found no statistically significant difference in sexual risk behaviors. However, race, age, and gender were significant risk factors in predicting sexual risk behavior. We found 16–18-year-olds were 3 times more likely to have multiple partners (OR:3.3; 95% CI: 2.3-4.9). White students were 70% (OR: 0.3; 95% CI: 0.2-0.5) less likely to have an early sexual debut, almost 3 times more like to use alcohol at last sex (OR: 2.6; 95% CI: 1.5-4.6), and 50% less likely to use a condom at last sex (OR:0.5; 95% CI: 0.3-0.7). Males were more likely to have sexual debut before 13 years (OR: 4.6; 95% CI: 2.9-7.2) and have multiple sexual partners (OR: 2.2; 95% CI: 1.6-3.1).

Conclusion:
AOUM sex education programs are ineffective in reducing HIV vulnerability among youth in Mississippi. There is an urgent need to implement comprehensive sex education if we are to reduce the numbers of new HIV infections among youth and achieve our goal of Ending the HIV Epidemic (EHE) by 2030.

**Aging**

**Disparities in Healthy Aging in Older Women at the Intersection of Sexual Orientation and Race, and Ethnicity** Ellesse-Roselee Akre* Ellesse-Roselee Akre

The objective of this study was to examine the relationship between structural racism and heterosexism and healthy aging outcomes in women aged 50 and older. We used race and ethnicity and sexual orientation as proxies for racism and heterosexism to conduct an intersectional analysis of healthy aging outcomes. Using pooled cross-sectional data from the 2014-2020 Behavioral Risk Factor Surveillance System (BRFSS) we conducted logistic regression analyses to examine the relationship between aging outcomes and social identities targeted by racism and heterosexism. When adjusting for known confounders, heterosexual women of color, and lesbian and bisexual women of all races and ethnicities experience increased odds of poorer aging outcomes when compared to heterosexual older White women. Findings demonstrate that exposure to structural racism and heterosexism negatively impact older women of color, and older lesbian and bisexual women's ability to age healthily. There is a need for policies and protections to be established to ensure that older lesbian and bisexual women of color can access necessary services and supports to have an equitable opportunity to age well.

**Biomarkers or biological pathways**

**Stroke Incidence and High Sensitivity C-Reactive Protein among African Americans: The Jackson Heart Study** Cellas Hayes* Cellas Hayes Jennifer Reneker Mandip Dhamoon Elizabeth Heitman Keith Norris Bettina Beech Marino Bruce Roland Thorpe

In the United States, strokes are a leading cause of death and disabilities, especially for older adults; however, effective biological markers to predict stroke remains elusive. The objective of this study was to investigate the association between inflammation, as measured by high-sensitivity c-reactive protein (hs-CRP) and stroke incidence among African Americans (AA) enrolled in a community-based longitudinal observational study, the Jackson Heart Study.

Baseline hs-CRP levels were categorized in the following tertials (<0.147 mg/L, 0.148-0.430 mg/L, >0.431 mg/L). Stroke risk factors/covariates were compared across hs-CRP tertiles. Continuous variables were compared using a one-way ANOVA, and a Chi-Square test was used for categorical variables. To determine whether baseline hs-CRP levels were associated with stroke incidence, Cox regression analyses were conducted to estimate hazard ratios (HRs) and 95% confidence intervals (CI).

Of the 3,411 participants meeting the inclusion criteria, the average age was 54.0 and 36.3% were male. In the crude model, hs-CRP levels in tertile 2 (HR 0.66; 95% CI 0.44-1.06) and tertile 3 (HR 0.94; 95% CI 0.62-1.41) were not associated with stroke incidence when compared to tertile 1 (reference). After adjusting for stroke risk factors (demographics, anthropometrics, health condition covariates, health behavioral risk factors, and cardiovascular disease history), there was decreased risk for stroke participants in tertile 2 (HR 0.59; 95% CI 0.35-0.98) but not tertile 3 (HR 0.78; 95% 0.47-1.29).

Overall, these results do not corroborate previous studies' findings from the general population that hs-CRP is associated with stroke incidence; however, this study targets only AAs. Although several studies have demonstrated higher hs-CRP in AAs, there has been a lesser association of hs-CRP and cardiovascular disease; hence, these findings provide new insights that hs-CRP l may not be a reliable predictor for stroke incidence among AAs.

**Environmental factors**

**Differences across social strata in childhood neurocognitive effects of outdoor ambient temperature fluctuations.** Scott Delaney* Scott Delaney Keith Spangler Rachel Nethery Henning Tiemeier Marc Weisskopf

Background

Climate change will increase extreme weather events, including rapid fluctuations in outdoor temperatures (heat and cold waves), and affect all domains of health, including neurodevelopment. We studied whether rapid deviations from expected temperatures affect childhood cognition and whether effects are modified by social disadvantage.

Methods

We linked data from 11,446 children aged 9-10 in the Adolescent Brain Cognitive Development Study to weather data from the PRISM Climate Group. Children completed NIH Toolbox cognitive tests, yielding composite total cognition scores (mean=101, sd=18). We calculated daily deviations from the prior 14 days' mean heat index (Expected HI) for 20 days before and including each child's assessment; used distributed lag nonlinear models adjusted for age, sex, race/ethnicity, parental income and education, neighborhood deprivation index (ADI), site, and seasonality; and stratified analyses by parental income, education, and ADI.

Results

701 children completed cognitive tests on days 10ºC or more above or below the Expected HI. Overall, results suggest a -2.4 (95% CI: 4.92, 0.20) unit decrease in total cognition score for a 10ºC increase (upward fluctuation) over the Expected HI through the lag period. Effects for downward fluctuations were somewhat smaller.

Surprisingly, effects were greater among high vs. low SES children, e.g., upward fluctuation effects were greater in children of higher income families (B=-3.1, 95% CI: -6.1, -0.0) vs. lower income families (B=0.0, 95% CI: -0.4, 0.4). Stratifying by high vs. low parental education and ADI yielded similar patterns.

Conclusion

Rapid outdoor temperature fluctuations may reduce childhood cognitive performance. Prior research suggests heat and cold waves disproportionately burden disadvantaged groups, yet these results suggest an opposing pattern of effects on cognition. Results warrant further investigation to understand how climate change may impact childhood cognitive development.

**Health behaviors**

**Impact of Experiences of Discrimination on Self-Efficacy among Parents/Caregivers of Hospitalized Children** Nathaniel Glasser* Nathaniel Glasser Jacob Jameson Victoria Winslow Emily Abramsohn Jyotsna Jagai Stacy Lindau

**Background:** Experiences of discrimination can damage health via myriad pathways. One mechanism may be experiences of discrimination adversely impacting self-efficacy (confidence in one's ability to solve problems and overcome barriers) both in general and for finding resources.

**Objective:** To quantify associations between experiences of discrimination and people's general self-efficacy and self-efficacy for finding resources.

**Methods:** Parents and caregivers (N = 188, 174 mothers) of children <18 years-old hospitalized between 11/2020 – 2/2022 were enrolled to the control arm of an ongoing randomized controlled trial. Community and healthcare-based discrimination were assessed using the Experiences of Discrimination (baseline) and Discrimination in Medical Settings (7-day) scales; higher scores indicate greater discrimination. Associations between experiences of discrimination and general self-efficacy (range: 10-40) and self-efficacy for finding resources (Likert scale, range: 1-5) were modeled using linear regression, adjusting for age, race, ethnicity, income, gender, marital status, perceived neighborhood safety, and food security category (defined as secure, marginal, and food insecure based on responses to the 18-item USDA Household Food Security Survey).

**Results:** Most caregivers identified as single (85%), African-American (82%) and female (93%). Median age was 34. Experiences of community- (79%) and healthcare-based (55%) discrimination were common. While there were no significant associations between discrimination and individuals' general self-efficacy, experiences of community-based discrimination were negatively correlated with self-efficacy for finding resources ($\beta$ = – 0.07, 95% CI: – 0.13 – -0.01, p < 0.05).

**Conclusions:** Consistent with prior hypotheses and qualitative research, we find a quantifiable negative correlation between experiences of discrimination and self-efficacy for finding healthful community resources.

**Health behaviors**

**Don't tell me what to do: Partisanship and Masking Behavior** Jiuchen Deng* Audrey Dorélien
Audrey Dorélien

We study to what extent wearing masks while interacting with others and refusing to wear masks are influenced by political affiliation during the COVID-19 pandemic in Minnesota. We use data from a representative social contact survey that documents the participant's actual number of contacts, including whether the respondent wore a mask as opposed to only attitudes towards masking behavior. This is important because intentions to wear masks may differ from practice. We utilize zip-code level vote share from the 2020 presidential election to measure political affiliation. We find that adults living in zip-codes that voted for Biden were 24% more likely to wear a mask with non-household member contacts compared to those in zip-codes that voted for Trump. Biden voters. The elasticity of Democratic vote share on mask refusal is about -1.

**Health equity**

**The evolving role of an evidence clearinghouse: Connecting evidence and historical context to advance health equity** Bomi Hirsch* Bomi Hirsch Michael Stevenson

What Works for Health (WWFH) is an evidence clearinghouse that helps policymakers and practitioners explore evidence-informed policies and programs. Over time, WWFH evolved to include implementation resources and examples to help users implement solutions in their community. As communities seek to invest in solutions that advance equity, WWFH is evolving to assess a policy or program's potential impact on disparities and equity. However, even as our understanding of equity has deepened, there are significant gaps in the current evidence base that limit what we know about a particular policy or program's impact on reducing inequities.

To better understand WWFH's role in helping communities select evidence-informed solutions to advance equity, we conducted four semi-structured panels with WWFH users and equity experts from local government, universities, and research organizations. We also reviewed health equity impact assessment frameworks from other organizations.

We learned that WWFH should take an interdisciplinary approach and move beyond the traditional evidence base to help users understand a solution's potential impact on inequities. Based on recommendations from the panels, WWFH introduced a new "Equity Analysis" for each policy and program. In the equity analysis, we make clearer connections between the root causes of inequities and how well a solution accounts for the structural and historic factors that created and maintain them. Experts from the panels emphasized the importance of helping users consider historical context so they don't obscure deeper issues of structural inequities, trauma, and discrimination. Historical context also acknowledges that some solutions provide relief to inequities but don't address underlying historical drivers.

In this presentation, we'll discuss WWFH's interdisciplinary approach to embed historical context in the evidence clearinghouse to help users more fully consider root causes of inequities.

**Health equity**

**Food Insecurity and Experiences of Discrimination among Parents/Caregivers of Hospitalized Children** Alexis Cacioppo* Alexis Cacioppo Emily Abramsohn Victoria Winslow Jyotsna Jagai Jennifer Makelarski Kristen Wroblewski Stacy Tessler Lindau

Background: The U.S. Centers for Medicare & Medicaid Services and others advocate for household food insecurity screening in clinical settings. We hypothesize that households identified as food insecure during a child's hospitalization are more likely than others to experience hospital- and community-based discrimination.

Methods: Parents/caregivers (N=249) of children <18 years old admitted to an urban, academic children's hospital were surveyed from 11/2020-02/2022 in an ongoing trial. 30-day household food security was assessed at baseline using the U.S. Household Food Security Scale (food security, marginal food security, and food insecurity). Discrimination was measured using the Discrimination in Medical Settings (DMS) Scale and Experiences of Discrimination (EOD) Scale (raw score=7-35 and 0-45, respectively); higher scores indicate more frequent experiences of discrimination. The association between food security status (predictor) and discrimination (outcome) was modeled using linear regression, adjusted for race, income, gender and marital status.

Results: Most participants were single (85%), Black/African American (83%), women (94%) and identified as a parent of a hospitalized child (93%). Food insecurity and marginal food security were prevalent (25% and 15%, respectively). Many participants experienced discrimination (DMS: median=8, interquartile range (IQR)=7-13; EOD: median=12.5, IQR=6-20). Participants experiencing food insecurity were more likely to experience discrimination in the hospital (β=2.1, 95% CI 0.5, 3.7, p<0.01) and community (β=6.7, 95% CI 4.2, 9.2, p<0.001) compared to food secure participants.

Conclusions: Implementation of food insecurity screening in clinical settings should be informed by evidence that people with food insecurity are more likely to experience discrimination in medical and community settings.

**Health equity**

**Healthy-Bronx Research Collaborative: A mixed-method approach to Community-Based Participatory Research using GIS tools and Strengthen Based Assessments** Maria-Isabel Roldos* Maria-Isabel Roldos Yanitza Piedra Andres Valcarcel

Community-Based Participatory Research (CBPR) is a well-known approach to develop programs and conduct research to address health disparities. It is best achieved when academic researchers form collaborative partnerships with community-based organizations (CBOs) and share the decision-making throughout the research process. By partnering with community members, CBPR provides an outlet to express needs and concerns and to build community capacity to address them. To this end, *Healthy-Bronx Research Collaborative* developed a data visualization tool (GIS maps) to spatially depict the Bronx community districts and the location of Community-based organizations (CBOs) and conducted Strengthen Based assessment (SBA) among CBOs t in Bronx, NY. This project is housed at CUNY's Institute for Health Equity (CIHE)

*Methods:* Upon approval from CUNY IRB, two online data call efforts were sent to CBOs across the Bronx, to collect consent to participate in CIHE's *Healthy-Bronx Research Collaborative* GIS maps and complete an SBA assessment between October 2021 and March 2022.

*Results:* A total of 75 CBOs participated in the GIS maps and 34 CBOs completed SBA.

Maps 1 & 2 illustrate 35% of the CBOs have multiple locations in at least 11 of the 12 Community districts in the Bronx. Results suggest 65% have been established in the Bronx for over 10 years, and 85% report working actively in the last 5 years. Education and training are the services most provided by CBOs and racial and ethnic minorities and low-income groups are the populations most served. Participating CBOs from the Strength-based assessment(SBA) highlighted the following areas with the SBA framework:

*Strengths:* Provision of housing and special need services; working closely with beneficiaries; language skills; and working with the youth.

*Growth Opportunities:* Have more resources financial and physical space; more skill for to conduct fundraising skills; improve communication and marketing

*Opportunities in services:* Expansion of services; Increase collaboration; increase capacity; provide more online services

*Threats:* lack of physical space; lack of funding; staff shortages; access to technology

The results from this work great promise develop a partnership with community organizations, formalized through a memorandum of understanding, and convene a series of partnership meetings to create a long-term CBPR agenda and establish a permanent infrastructure to facilitate implementation of CBPR projects between CBOs in the Bronx, and CUNY's Institute for Health Equity (CIHE).

**Health equity**

**What Public Health Can Learn from Protestors** Marie-Fatima Hyacinthe* Marie-Fatima Hyacinthe Emilie Egger Mukesh Adhikari

In 2020, the United States saw the largest protest movements since the Civil Rights Movement, months into the COVID-19 pandemic in response to racism and specifically the violence of policing. At the time, less was known about the relatively low risk of outdoor activities, and the protests coincided with many states loosening stay-at-home orders, which caused increased concern about COVID-19. Journalists and public officials alike suggested that these protests might become "super-spreader events." However, as the summer progressed, reports came from regions around the nation that they were not seeing connections between protests and increased COVID rates. ). We used qualitative methods informed by Black feminist and anti-racist frameworks to investigate why increases in COVID-19 rates did not follow Black Lives Matter (BLM) protests, adding context to the epidemiological data that was available to us.

In seeking to understand why infection rates did not rise following protests, we spoke to protestors about their motivations for participating in BLM demonstrations and the precautions they took against COVID-19. This presentation will discuss the role of reflexivity in our analysis: some of the authors were also participants in the protest. We found that protest organizers and participants understood COVID-19 disparities as a racial justice issue, rooted in the same racism that perpetuates police violence. This presentation will demonstrate the importance of incorporating anti-racist and social justice frameworks into our academic scholarship, to both strengthen our work and facilitate solidarity between researchers and the communities we work with.

**Health equity**

**Creating An Agenda for Black Birth Equity** Sharla Smith* Sharla Smith Michelle Redmond

Background: The grim inequity that Black women and infants are more than twice as likely to die during birth than their white counterparts is a public health crisis.

Methods: Guided by principles of critical race theory, we used content analysis to analyze the themes of the presentation made by five Black community members on a 2020 Juneteenth panel, a holiday celebrating the emancipation of those who had been enslaved in the United States.

Results: Panelists sparked the conversation by unpacking the traumatic experiences of health inequities and structural racism on Black families and diverse caregivers. As a part of qualitative content analysis, four major themes emerged: 1) the matrix of domination, 2) specific oppressions of the health care system, 3) empowerment reconceptualized, and 4) dimensions of racism. Participants also discussed how racial disparities may have exacerbated the complexities and challenges of elevating Black voices and creating birth equity.

Discussion: Based on Black families' experiences, four areas must be addressed: the healthcare system's policies of oppression that create barriers to listening to Black women, reconceptualizing retention for providers of color, and support for Black women and their families, and racism.

**Health systems**

**Implementation findings from a single-arm pilot trial of a lifestyle intervention to prevent diabetes in Black youth** Abigail Gamble* Abigail Gamble Bettina Beech Crystal Lim Shanda Sandridge Victor Sutton Breanna Wade Michael Welsch

Obesity and family history increase the risk for youth-onset type 2 diabetes mellitus (T2DM) disproportionately in Black youth. Critical questions about the feasibility and acceptability of family-based lifestyle interventions to prevent T2DM in youth remain unanswered. This single-arm pilot trial evaluated the implementation of a parent-focused lifestyle intervention in a telehealth setting for Black families with children at risk for T2DM. Parent-child dyads (n=19) were recruited from a pediatric weight management clinic to participate in a 30-week intervention (15 sessions). Child (8- to 11-years) eligibility criteria included having a body mass index (BMI) $\geq 95^{th}$ percentile and for parents ($\geq$18-years), a BMI $\geq$25 and $\geq$5 on the American Diabetes Association risk test. The REAIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework guided the evaluation. Feasibility, acceptability, and satisfaction were assessed. Barriers and facilitators to REAIM were identified. The strongest facilitators to Reach included clinician buy-in and point-of-care referral. Complexity and time made screening arduous for clinicians, but with the help of study staff 95% of the recruitment goal was met. Group-based sessions (n=3 groups; 5-8 parents per group) were delivered as planned. Group cohesion and lifestyle coach support encouraged attendance (82%), and Wi-Fi-enabled iPads made participation feasible. Parents reported high satisfaction (89%), requested a longer intervention (1- vs 0.5-year), and urged for a child-focused component. Estimated program costs were $1,232 per dyad. Implementation was not maintained after the study period and 47% of families complied with follow-up clinical care. Strategies for care team coordination and family retention in clinical care are needed. Future studies should explore reimbursement models for sustainability. These findings contribute to addressing barriers to implementing lifestyle interventions to prevent T2DM in Black youth.

**Health systems**

**Evaluation of EHR-based tools to address Chinese American H. pylori and stomach cancer disparities in a large NYC healthcare system** Yi-Ling Tan* Yi-Ling Tan Simona Kwon Janet Pan Devin Mann Renee Williams Qiuqu Zhao Anju Malieckal Chau Trinh-Shevrin

**Background**: Stomach cancer is the most common infection-related cancer worldwide. The eradication of the bacterium Helicobacter pylori (H. pylori) is the most effective prevention method for stomach cancer. However, clinician adherence to H. pylori treatment guidelines is not high. Medication adherence to the complex H. pylori treatment regimen is challenging, especially for Chinese Americans with limited English proficiency and low health literacy. Electronic health record (EHR)-based tools may be able to increase provider adherence to treatment and follow-up guidelines and decrease variations in care and patient education within a large healthcare system for Chinese Americans who carry an elevated burden of H. pylori infection and stomach cancer.

**Objective:** Working collaboratively with safety net community and health care provider stakeholders, we developed a health-systems level intervention using EHR-based tools to facilitate H. pylori treatment and follow-up strategies in 2018.We seek to evaluate the utilization of the EHR-based tools by physicians in the health system.

**Methods**: We developed a set of matrices to track utilization and users of the EHR-based tools, which went live in 2019.

**Results**: Between July 2019 and January 2020, there was a steady increase in numbers of physician orders for medication, from an initial 52 in July to 114 orders in January 2020. The patient education materials and laboratory orders were not as well utilized. During the pandemic, use of the EHR-based tools fell precipitously, reflecting the decline in treatment-seeking but as of July 2021 utilization has resumed pre-pandemic levels.

**Conclusion:** The EHR-based tools has fulfilled provider need for a simplified system to place H. pylori medication orders. However, the low orders for confirmatory tests and patient education materials suggest that providers would benefit from more education about the availability of the tools as well as the rationale behind their order set inclusion.

**The Influence of Racial Discrimination on Health Outcomes in Children** Nabeeha Engineer*
Nabeeha Engineer

Racism is a social determinant of health that has a profound impact on the health status of children, adolescents, emerging adults, and their families. Racism may be a factor contributing to poor health and health care disparities in minority children through multiple mechanisms, including effects on psychological and physical wellbeing. The purpose of this study was to examine the relationship between racial discrimination and child health for children. Using the 2018 National Survey of Children's Health (N= 7123), I conducted logistic regression analyses to examine the associations between anxiety and depression (dependent variables) with experiencing racial discrimination on children aged 5-17 who identified as an ethnic minority . Linear regression analyses were conducted to examine the associations between  experiencing racial discrimination and general health outcomes. Among minority children, children who experienced racial discrimination experienced a greater likelihood of having depression (b= .915, p<.001) and anxiety (b=.801, p<.001). Children who experienced discrimination had worse general health (b=.174, p<.001). Additionally, Black and African American children in this sample had worse general health outcomes (b=.109, p<.001). These results indicate that racism plays a role in minority children's health outcomes. Having a deeper understanding of the association between racial discrimination and child health is important in leading to research-informed social action to help children, families, and communities exposed to racism.

**Infants/children/youth**

**COVID-19 Highlights Child Care as Essential Infrastructure** Callie Ogland-Hand* Callie Ogland-Hand Darcy Freedman Owusua Yamoah Sarah Balser Ellen Doernberg Carlos Lewis-Miller

Child care centers in the United States are an essential service that enable parents and caregivers to work in and outside of the home and fosters the growth and development of children. Child care closures and COVID-19 mitigation measures heightened the need for and awareness of the role of child care as core infrastructure. The objective of our study was to examine the perceived role and benefits of child care programs based on the lived experiences of parents/caregivers and staff navigating child care during the pandemic. We conducted in-depth qualitative interviews with parents/caregivers (n=20) of children who attend child care and staff (n=12) of child care programs across Ohio from September to November 2020. Qualitative data were open coded and then analyzed through the lens of four frameworks related to child well-being: mutualism, capabilities, developmental, and economics. Our results illuminate how child care synergistically benefits children, parents, staff, and society in the short- and long-term. Child care supports capabilities and developmental growth in children necessary for daily living, provides economic benefits for children, parents, and staff of child care programs, and functions as key infrastructure that sustains the economy and society at large. The unique lived experiences with child care during the pandemic revealed child care as essential infrastructure with significant economic impact that is mutually beneficial to families and society. Our findings support investments in policies, resources, and supports for child care that reflect its essentialness and generative role. Increased resource allocation to expand access to early child care services has the potential to generate ripple effects by expanding capabilities and development among children, opportunity for families to thrive, and economic resiliency for communities.

**Infectious or Microbial**

**Differences in Pandemic Fatigue by Type of Contact and Sociodemographic Factors** Keeley Morris* Gillian Tarr Damon Leach Mark Fiecas

The impact of pandemic fatigue on willingness to adopt protective behaviors emerged early in the course of the COVID-19 pandemic, yet little is known about how it manifests in different groups. We sought to determine whether pandemic fatigue demotivated physical distancing behavior and whether the effect differed by sociodemographic factors.

In April-May 2020, we recruited: adults living with children (n=1001) and adults ≥50 years (n=340). Participants completed surveys at baseline; 2, 4, 8, and 12 weeks after enrollment; and in fall 2020. Surveys asked about frequency of various types of contacts at <6 feet, including visitors to the home and contacts during non-work outings (e.g. retail) in the past 7 days. For the 7-day average number of contacts of each type, we used a Poisson generalized estimating equation model to estimate the adjusted effect of calendar week on contact rate; interactions were examined for week and sociodemographic factors.

Both linear and quadratic terms for week were significant predictors of contact rate for all but one contact type, indicating initial increases in contact rates followed by decreases later in 2020. Modeled peaks in contact rates ranged from week 21 (May 18) for visitors to the home among adults ≥50 years to week 37 (Sept. 7) for dining contacts in the family cohort. Changes in contact rates over time differed by age and level of education; e.g., for every 10-year increase in age, participants in the family cohort had 3% fewer dining contacts per additional week of the pandemic, suggesting slower onset of pandemic fatigue, as manifested by dining out, among older individuals.

Pandemic fatigue is a complex behavior, which can be expressed through increased non-household contacts during essential and non-essential activities. We found that pandemic fatigue differed by sociodemographic characteristics, identifying opportunities for targeted public health messaging and support.

**Evaluation of a Reflective and Mindfulness-Based Intervention during Pregnancy: A Pilot Study** Karina Shreffler* Karina Shreffler Lucia Ciciolla Samantha Addante Julie Croff

Mindfulness-based interventions have been shown to be efficacious for reducing psychological distress and mental health symptoms and promoting well-being, including during pregnancy and postpartum. However, although mindfulness ability has been linked to maternal-fetal bonding, the literature suggests that interventions that focus solely on addressing maternal symptomology but do not address the mother-infant relationship are insufficient for supporting and improving disruptions to the mother-infant relationship. There is promising, though limited, evidence showing that interventions that focus on improving the mother-infant relationship are associated with improvements in both the mother-infant relationship as well as maternal mental health symptoms. The current study examines the effects of a prenatal mindfulness-based, reflective intervention designed to enhance maternal-fetal bonding on maternal psychological distress. Out of a larger sample of 130 pregnant women (16–38 years of age) in their second trimester, 15 women opted to participate in the Babies and Moms connected by Love, Openness, and Opportunity (BLOOM) intervention, which entailed engaging in reflective and mindfulness-based activities over a 2-week period. Multiple linear regression analyses were conducted to examine associations between the intervention and prenatal distress during the third trimester of pregnancy, controlling for race, age, education, union status, and prenatal depressive symptoms. Results indicate that women who participated in the BLOOM intervention during their $2^{nd}$ trimester reported lower prenatal distress in their $3^{rd}$ trimester ($b$ = -4.62, p<.05). Future research with a larger sample is needed to examine the effectiveness of the intervention for change in maternal mental health over time, including into the postpartum period.

**Legal System**

**Salus Populi: Educating the Judiciary about the Social Determinants of Health** Vela McBride* Vela McBride Wendy Parmet Jennifer Huer Faith Khalik

Research has consistently demonstrated that laws, along with their implementation and enforcement, can have a significant impact on population health and health equity. In particular, the judicial system plays a major role in shaping population health through decisions related to key social determinants such as housing, employment, socio-economic status, racism, and more. Salus Populi: Educating the Judiciary about the Social Determinants of Health is a collaboration between the Center for Health Policy and Law and the Institute for Health Equity and Social Justice Research at Northeastern University. This innovative program seeks to provide training to judges on the social determinants of health (SDOH) and their relationship to judicial decision-making. Throughout four engaging, discussion-based units, Salus Populi provides judges with the knowledge and tools they need to recognize how upstream factors impact litigants and the issues that come before them in court. The curriculum introduces judges to the research methodologies and evidence-based frameworks used to study the SDOH and, subsequently, utilizes legal case studies for practical application of these concepts. In this presentation, we will describe the empirical research that informed the program's development, the community-partnered process of creating and implementing the Salus Populi curriculum, and the preliminary evaluation of the Fall 2021 pilot.

## A Decomposition Analysis of Mental Health Disparities Between Sexual Minority and Heterosexual Adults in the United States Harrison Stuart* Harrison Stuart Gilbert Gonzales

Background: Sexual minorities (i.e., lesbian, gay, bisexual, and other minority sexual orientations) are more likely to report psychological distress than heterosexuals. Some of this disparity is likely due to discrimination and stigma, which most population-based surveys do not measure. The objective of this study is to use Oaxaca-Blinder decomposition techniques to identify the contributing factors of disparities in psychological distress that are potentially explained by observable characteristics and the residual disparities that may due to unobservable characteristics (i.e., discrimination and stigma).

Methods: Data came from the 2015-2018 U.S. National Health Interview Survey and included 3,748 sexual minority adults and 110,948 heterosexual adults. We compared demographic traits and the prevalence of moderate to severe psychological distress based on Kessler's screening instrument. We then used Oaxaca-Blinder decomposition to characterize observed disparities into explained and unexplained portions using multivariable regression models controlling for age, race/ethnicity, educational attainment, family income, marital status, and the presence of a child in the household.

Results: 20.6% of heterosexual adults and 39.6% of sexual minority adults reported moderate to severe psychological distress. Observable factors only explained 18.1% of the disparities, leaving 81.9% to unobserved factors. Discrimination and stigma may contribute to a large portion of mental health disparities for sexual minorities, but other factors, such as barriers to mental health services, may contribute too.

Conclusion: Mental health providers should continue to screen for psychological distress among sexual minority patients and foster more inclusive clinical environments. Policymakers should also consider non-discrimination protections in the social determinants of health so that sexual minorities feel welcomed.

**Mental health/function**

**Variation in the Effect of COVID-19 Media Consumption and Psychological Distress Among Older Adults** Shawn Bauldry* Shawn Bauldry Kevin Stainback

The current study investigates (1) the relationship between covid-based media consumption and psychological distress among older adults and (2) variation in this relationship by gender, race/ethnicity, education, and marital status. Data come from Wave 64 of the American Trends Panel, a nationally-representative survey of U.S. adults fielded March 19-24, 2020 (N = 2,795). Results indicate older adults who followed the news about the pandemic "very closely" scored higher on psychological distress than other adults and the relationship between media consumption and psychological distress was more pronounced among racial/ethnic minorities than White people and among older adults with a college degree or more than those with a high school degree or less. The findings highlight role of media consumption in exacerbating the impact of a macro-level stressor such as a pandemic on psychological wellbeing as well as variation in the relationship between media consumption and psychological distress by race/ethnicity and socioeconomic resources. These findings are contextualized in the broader stress process model with a focus on a macro level stressor with differential exposure and differential vulnerability to the stressor as well as differential availability of coping resources.

## Methodological approaches to studying public health

### Recruitment of women with breast cancer and approaches to collection of epidemiologic and egocentric social network data
Candyce Kroenke* Candyce Kroenke Rhonda Aoki Elaine Kurtovich David Kennedy

**Background/objective:** Critical to the promotion of health equity is the recruitment of persons from racial/ethnic minority groups in research. We were interested in collecting epidemiologic and egocentric (data on social network ties or "alters" related to a central person or "ego") social network data in a representative group of women with breast cancer and evaluated multiple approaches to recruitment.

**Methods:** We recruited 440 women from the Kaiser Permanente Northern California population diagnosed with stages 0-IV breast cancer. Recruitment occurred in person at the clinic, by email, or by mailed letter. In the clinic and mail recruitment, we asked women to complete a short paper survey (epidemiologic data) and gave women the option to complete a separate egocentric survey online. In the email recruitment, we administered epidemiologic and egocentric surveys together and online only; women could opt to complete the epidemiologic survey only or both surveys. The time to complete the epidemiologic survey was ~2-3 minutes; time to completion for the egocentric survey was ~30-45 minutes. In email and mail recruitment, we sampled 30% White and all racial/ethnic minority women. We used descriptive analysis to compare methods of recruitment, overall, by race, and compared to the overall population and multinomial logistic regression to examine odds of recruitment by method relative to mailed letter.

**Results:** Women responded to social network measures on average 3.6 months after diagnosis. Mean age was 59.2 (median=61.0). Clinical recruitment was superior overall with 52.1% success rate of recruitment compared with 35.6% by mail or 17.3% by email ($\chi2$=56.0, p<0.001). We were less likely to recruit older women and Asian (OR=0.31, 95% CI: 0.15-0.65), Hispanic (OR=0.31, 95% CI: 0.12-0.76), or Black (OR=0.53, 95% CI: 0.30-0.95) (vs. non-Latina White) women by email and equally likely to recruit these women face-to-face in the clinic and by mailed letter. Letter recruitment resulted in the highest response to the epidemiologic survey but email recruitment produced the highest completion rate (81.5%) of personal network data compared with clinic (36.5%) or mail (28.7%), ($\chi2$=129.0, p<0.001).

**Conclusion:** Though the response rate for email recruitment was lower than clinical or mail recruitment, it was better for the collection of complex social network data since the online-only administration, though time consuming, minimized the number of administrations.

## Methodological approaches to studying public health

**Understanding accumulation of health-related inequities over the life course using the mean cumulative count** Katherine LeMasters* Katherine LeMasters Lauren Zalla Audrey Renson

Background: Health-related exposures and outcomes can occur repeatedly over a person's life, meaning that health-related inequities can accumulate or change over the life course. Understanding how cumulative inequalities develop over time is necessary to inform effective interventions, but methods to describe such complexity have been lacking so far.

Methods: We provide an example of the mean cumulative count (MCC), a recently-developed estimator of the expected number of events per person as a function of time, allowing for censoring and competing events. We study the MCC of criminal legal involvement, a prevalent, often repeating exposure whose distribution is inequitable between racialized groups in the United States. Data come from the National Longitudinal Survey on Youth 1997, a longitudinal data set of adolescents (baseline age: 12-17) followed into midlife (1997-2017), including criminal legal involvement (inclusive of arrests, charges, probation, and incarceration). To compare the MCC with a standard method, we present the proportion of individuals who had any criminal legal encounters.

Results: Our sample included 7,049 individuals followed for an average of 11.3 person years. Using the MCC, by age 24, the expected number of encounters was 37 events per 100 persons for Black non-Hispanic, 31 per 100 for non-Black non-Hispanic, and 30 per 100 for Hispanic individuals. By age 35, inequities had grown to 74, 56, and 54 events per 100, respectively. In contrast, the proportion with at least one criminal legal encounter by age 35 was 28% for Black non-Hispanic and 23% among both non-Black non-Hispanic and Hispanic individuals.

Discussion: The MCC revealed that inequities in criminal legal involvement accumulate over early adulthood, partially driven by repeat events; this information was not evident from a conventional approach. This method can be used to identify points of intervention to disrupt the accumulation of repeat events and increase health equity.

## Methodological approaches to studying public health

**Integrating Electronic Health Records with Census Data to Address Health Disparities: First Steps** Aubrey Limburg* Barbara Entwisle Timothy Carey Paul Chelminski Lucinda Dalzell Joanna Motro Victoria Udalova Jordan Young

Electronic health records (EHRs) have the potential to shed light on racial and ethnic health disparities with their up-to-date detailed information on patient visits, lab reports, diagnoses, medications, and the like for a large sample size. However, there are some challenges to overcome, including sometimes missing race and ethnicity in the EHRs; limited social characteristics; and questionable population representation. A possible solution is to join EHRs to microdata from US Census Bureau records, leveraging their complementary strengths. This paper describes a first step towards this goal—assessing the assignment of Protected Identification Keys (PIKs) to EHRs in relation to race, ethnicity, and other characteristics. Our assessment is based on EHRs from an integrated health delivery system in the Southeast. We randomly sampled ~200,000 persons ages 25-74 with at least two visits between 1/1/2016 and 12/31/2019, stratified by race and ethnicity. PII (name, address, date of birth, sex, Social Security number), race, ethnicity, language, and health insurance for the selected sample were transferred securely to the Census and put through the Census Person Identification Validation System (PVS) to assign PIKs as unique identifiers to link EHRs to other Census data, such as the American Community Survey. Overall, 94% of the records received PIKs. To assess differentials in PIK assignments, linear probability models were run regressing success (1=PIK assigned, 0=not) on race, ethnicity, language, birth cohort, health insurance, and residence (in state, or not). Results show that other things equal, PIK assignments for Black individuals were approximately the same as for White individuals. Hispanic individuals were 4 percentage points less likely to receive PIKs than Whites and an additional 2 points less likely than those who reported their race as "other," common among Hispanics. Potential reasons for and implications of these patterns are discussed.

**Migration**

**The role of social belonging in the physical health of Somali young adults resettled in North America** Francesca Korte* Francesca Korte Ashley R. Houston Alisa K. Lincoln Gretchen Moulton Zakaria Mohamed

Due to long-term civil unrest, Long-term civil unrest in Somali has led to many Somali refugees resettling in North America. Prior research, some from our team, has demonstrated the many pre- and post- migration threats to Somali refugees' physical and mental health. Social belonging post-resettlement has been shown to be a powerful predictor of health among refugee and immigrant groups, however, no research to date has examined the impact of social belonging on physical health and healthcare access among this population. To address this gap, we draw on mixed methods data from the Somali Youth Longitudinal Survey, a community-engaged, interdisciplinary project examine Somali young adults' health in five North American cities:  Boston, MA; Minneapolis, MN; Lewiston, ME; Portland, ME; Toronto, ON. In this project, first we conducted quantitative analyses to test the association between social belonging and self-rated physical health, and social belonging and healthcare access among Somali young adults in North America. We also examine key moderators of this relationship including gender, age, and time in the US. Next, we used these findings to inform qualitative themes to analyze semi-structured interviews. Finally, drawing from a sequential mixed methods design, our qualitative findings were used to inform the interpretation of our quantitative results. Our initial results indicate that social belonging predicts self-perceptions of health and shapes healthcare access among Somali young adults resettled in North America. These findings underscore the importance of fostering social belonging both in and out of healthcare spaces to promote physical health and well-being for refugee populations.

**Place/Communities**

**Finding, selecting, and deploying data for health equity** Christine Muganda* Christine Muganda Anne Roubal Molly Burdine Hannah Olson-Williams

County Health Rankings & Roadmaps (CHR&R) annually ranks U.S. counties on health factors and outcome indicators based on a model that emphasizes social determinants of health. Now in its second decade of existence, the program seeks to measure and portray health equity and health disparities more explicitly. As CHR&R reimagines its model to better communicate and measure the structural, historical, and place-based factors that are intertwined with—and often originate upstream from—the social determinants of health, the program is reexamining the way it finds, selects, and deploys data. To be incorporated in the CHR&R model, indicators must align with program objectives and community needs while adhering to standards of quality, access, and compatibility with the CHR&R model. While CHR&R desires to maintain a parsimonious dataset, it also seeks to explore and include new measures that are salient, legitimate, credible, and advance health equity. To that end, CHR&R has put in place several guidelines for indicators, organized into five categories:

1. **Source** considerations account for methodology used by the data source from which the measure is derived with a focused effort to obtain data which are as representative as possible and/or capture historical context of a place.
2. **Strategic** considerations evaluate alignment of a measure with CHR&R goals.
3. **Theoretical** considerations in measure development account for the underpinning of a measure's relationship to community health.
4. **Analytical** considerations are intended to demonstrate, either qualitatively or quantitatively, the relationship of an indicator to health at the population level.
5. **Communications** considerations account for the ability of communities to meaningfully use, disseminate, and translate the data for their work.

Ideally, new and existing measures would meet all or nearly all guidelines; however, this is practically difficult given data source, geographic, and time limitations. In this presentation, we will discuss successful strategies and ongoing challenges in the process of augmenting a successful but imperfect model of population health and health equity.

**Place/Communities**

## Using Business Listing Data for a New Measure of Neighborhood Asian-Serving and Hispanic-Serving Sociocultural Institutions and Implications for Health Brittany Morey*

Brittany Morey Samantha Garcia Katherine Lin Alison Canchola Elaine Kurtovich Stephen Uong Alice Guan Daniza Acenas Gauri Samant Candyce Kroenke Scarlett Gomez

**Significance:** Ethnic enclaves—defined as areas with high ethnic concentration, cultural identity, and economic activity—are often measured using neighborhood racial or ethnic concentration. We present two new measures called Asian-serving and Hispanic-serving sociocultural institutions, which we define as businesses or organizations that have cultural meaning to specific communities, particularly those that provide opportunities for community members to interact in positive ways around social, recreational, religious, civic, or other common interests. Ethnic-serving sociocultural institutions may support health, independent of neighborhood ethnic makeup.

**Methods:** Using Dun and Bradstreet data, sociocultural institutions were identified by selecting businesses in certain Standard Industrialization Codes (e.g., social service, religious, civic organizations, etc.). We created two separate lists of keywords applied to names of all sociocultural institutions in California to identify businesses that would likely be Asian- or Hispanic-serving. To validate our measure, 3 independent auditors reviewed 653 businesses in 29 randomly selected census tracts that varied by region, urbanicity, and ethnic composition. Using online searches (e.g., Google, Yelp), auditors determined whether businesses were Asian- or Hispanic-serving sociocultural institutions. We compared auditors' determinations to results of keyword searches.

**Preliminary Results:** Of CA census tracts, 9% and 8% have a high count (≥4) of Asian- and Hispanic-serving sociocultural institutions. According to the audit, our measure of ethnic-serving sociocultural institutions showed high sensitivity and specificity (Asian: sensitivity=100%, specificity=95%; Hispanic: sensitivity=75%; specificity=90%).

**Discussion:** A novel measure of ethnic-serving sociocultural institutions using business data extends our theorizing about how ethnic neighborhoods are associated with health and may be useful for examining mechanisms.

**Place/Communities**

**Neighborhood Level Educational Opportunity is Positively Associated with School Readiness at age 4-6** Alexis Sullivan* Alexis Sullivan Emily Shih Jessica Arizaga Nora Byington Lauren Sims Taylor Sheela Sathyanarayana Catherine Karr Nicole Bush Alex Mason Kaja LeWinn

Background: School readiness predicts future academic and occupational success as well as health outcomes. In the U.S., there are significant academic achievement gaps for children in poverty and across racial and ethnic groups. While individual-level predictors have been well-studied, less is known about neighborhood-level factors that promote school readiness. We examine the association between neighborhood-level educational opportunity and school readiness in a socioeconomically diverse sample of children.

Participants/Method: Participants included 1,043 mother-child dyads from Shelby County, TN who were enrolled in the CANDLE study, an ECHO PATHWAYS Consortium birth cohort. Neighborhood-level early education quality was derived from three, Census-tract level, early education quality indicators from the Child Opportunity Index 2.0: the percent of children enrolled in early education, and the number of early childhood education centers and accredited centers within a 5-mile radius. Indicators were linked to participant address history and weighted to account for time at each residence. Our primary outcome measure was the Bracken School Readiness Assessment at age 4-6. We used multiple linear regression with robust standard errors to estimate associations between neighborhood-level educational opportunity and school readiness, adjusting for child demographics, multiple indicators of socioeconomic position (SEP), neighborhood poverty, maternal cognition, and parenting.

Results: Children in the analytic sample (mean age=4.34, SD=0.46) were 68% Black, 28% White; 45% of mothers had a high school degree or less. In fully adjusted models, neighborhood early education quality was positively associated with children's school readiness (B=1.47; 95%CI:0.67,2.27; p = <.000).

Conclusions: These findings suggest that addressing inequities in neighborhood-level childhood educational opportunities may help reduce socioeconomic disparities in school readiness.

**How do we find essential workers and who are they? Lessons in geographically aggregated data** Hanna Jardel* Hanna Jardel Paul Delamater

**Introduction** In light of the COVID-19 pandemic's disproportionate impact on marginalized racial and ethnic populations, it is important to investigate potential exposure mechanisms. One mechanism to consider is occupational: essential workers necessary to continue critical functions may face more exposure. Common knowledge suggests that these essential jobs are held by a higher proportion of Black individuals than white, though this hasn't been well studied. This study investigated this assumption while also interrogating the quality of mobility data for this purpose.

**Methods** This project utilized American Community Survey (ACS) 2019 data paired with SafeGraph(SG) cell phone mobility data to examine working patterns at the census block group (CBG), tract, and county levels in North Carolina. SG data classifies constituent devices based on movement into groups including full time, part time, or delivery work patterns. This study calculated rolling 14-day averages for each CBG and compared a cross section of SG data at the lowest working percent during 2/2020-5/2020 against percent Black population. We also investigated potential bias in SG data by examining ACS estimated population against SG total devices, stratifying by key sociodemographic variables such as income, percent black population, percent over 55 yrs, percent 18-65 yrs, urbanization level, and crowded living conditions.

**Results** Kendall's tau indicates that rolling 14-day averages of percent of any working pattern were associated with percent Black population at the CBG, tract, and county levels, though with differing directions. SG data exhibits bias differential on a number of key sociodemographic factors, magnitude of which changes over time.

**Conclusion** While this project supports common knowledge concerning racial minorities and essential worker status, caution should be exercised when utilizing mobility datasets because of bias differential on key sociodemographic factors.

**Race/Ethnicity**

**Adapting the ROSE postpartum depression prevention program for Chinese American mothers in Sunset Park, Brooklyn** Yi-Ling Tan* Yi-Ling Tan Bonnie Kerker Julie Katter Grace Tian Angel Mui Stella Chong Shonna Yin Simona Kwon

**Introduction**: Postpartum depression (PPD) is linked to negative outcomes for women and children, and disproportionately affects low-income women of color. Asian Americans face complex barriers to mental health care-seeking and service uptake. Reach Out and Stay Strong Essentials for new mothers (ROSE) is an evidence-based intervention (EBI) that aims to increase the use of social support and coping skills to decrease PPD. Using a rigorous, community-engaged approach, we culturally and linguistically adapted ROSE for low-income, immigrant Chinese American mothers who seek prenatal care in an immigrant community in Brooklyn.

**Methods**: We used a 2-phase approach to adapt and pilot ROSE among Chinese-speaking mothers, guided by our Participatory Cultural Adaptation Framework, a systematic process which integrates community-engagement, implementation science, and surface and deep cultural domains. Firstly, we culturally and linguistically adapted ROSE through an iterative process which included a literature review, key informant interviews, and community and planning groups. In the second phase, we conducted a feasibility pilot of the adapted. During this phase, data was collected through participant surveys, facilitator consultation calls, post-intervention participant debrief sessions, and focus groups.

**Results**: We will present on the framework and processes applied to guide the adaptation. We will also share the major adaptations of the ROSE curriculum, and preliminary data from the pilot intervention in Sunset Park.

**Discussion:** In order for EBIs to be successful in diverse communities, cultural adaptation is key. We anticipate that this adaptation will increase the acceptability and usability of ROSE among Chinese American women, addressing a gap in the practice-base for a culturally tailored PPD prevention intervention among high-risk Chinese American mothers in an immigrant community.

**Race/Ethnicity**

**Too Much Democracy? Exploring the Link Between Majoritarian Institutions and Health Disparities in the American States** Julianna Pacheco* Julianna Pacheco Scott LaCombe

Do democratic institutions that empower majority preferences exacerbate disparities in health outcomes? We explore the potentially perverse consequences of "too much" democracy in the American states. To do so, we use a novel dataset that measures the strength of political accountability in the states and link this measure to various racial and gender disparities in health and well-being. Our preliminary findings suggest that although states with institutions designed to promote accountability see higher life expectancies, these benefits are primarily concentrated in the white population, at the cost of stagnant or even decreased life expectancies for black populations. These findings have critical implications for understanding the tradeoff in designing majoritarian institutions that can strengthen majority opinion while potentially harming minority groups.

**Race/Ethnicity**

**Identifying disparities in HPV vaccination coverage by primary language group** Malini DeSilva* Malini DeSilva Gabriela Vazquez Elyse Kharbanda Zeke McKinney

Background: Disparities in HPV vaccination between race/ethnicity groups have been reported. However, differences within each racial or ethnic group may also be present. For example, previous studies have found lower uptake of HPV vaccine among East African immigrant groups in the United States. More granular demographic data is needed to inform targeted programs to increase vaccination uptake. Primary language may be a useful surrogate measure to account for heterogeneity among racial/ethnic subgroups and may be used to identify racial/ethnic disparities that are not evident across broad racial categories.

Methods: We included adolescents reaching the age of 13 years during 2018–2020 who were insured by HealthPartners and received care at a HealthPartners facility in 18 months prior to 13th birthday, and were alive as of January 1, 2021. We evaluated HPV vaccine coverage ( i.e., receiving 2 HPV vaccines) based on the Minnesota Community Measurement quality metric for adolescent vaccination. Evaluation was stratified by sex, race-ethnicity, primary language, and need for interpreter.

Results: Our sample included 13,638 adolescents, 6884 (50%) female, 35% had public insurance, and 3.6% were reported to need an interpreter. Overall, 42% of 13-year-olds had completed the HPV vaccine series, with completion increasing from 36% in 2018 to 48% in 2020. Non-Hispanic Asian adolescents had the highest percent of HPV vaccine completion at 48% and non-Hispanic Black adolescents had the lowest at 39%. Within the non-Hispanic Asian racial category, Hmong language speakers had the lowest coverage at 26% and Vietnamese language speakers had the highest at 63%. Within the non-Hispanic Black racial category, lowest completion was among Amharic (17%), Somali (22%), and Oromo (33%) primary language speakers.

Conclusion: The highlighted disparities in HPV vaccination demonstrate the need for effective, culturally-specific strategies to improve HPV vaccine uptake.

**Race/Ethnicity**

## Type-2 Diabetes and Psychological Distress Among Asian American Ethnic Groups in California

Erika Mey* Erika Mey Michael Huynh Annie Ro Brittany Morey

**Background**. Type-2 diabetes (T2D) is a large health concern in the Asian American community. One in two Asian Americans may develop or be at risk of T2D in their life. Given that Asian American health outcomes are typically aggregated, it is important to explore if T2D differences exist between ethnicities and if migration history patterns and psychological distress affect disparities.
**Objective**. The study aims to understand T2D prevalence in Asian ethnicities with different migration histories and examine the relationship between psychological distress and T2D among Chinese, Filipino, and Vietnamese groups.
**Methods**. We combined 5 waves of single-year California Health Interview Survey 2015-19 data in Asian adult respondents (n=6,273). We conducted unweighted and weighted analyses to examine the association between psychological distress and T2D based on different migration histories and relevant demographic, cultural, socioeconomic, and biological variables of interest.
**Results.** There was no significant relationship between psychological distress and T2D, but there were significant differences in the prevalence of T2D (5.9% Chinese, 11.9% Filipino, 8.2% Vietnamese) and psychological distress (5.4% Chinese, 13.2% Filipino, 5.7% Vietnamese) within Asian groups. Other variables that significantly affected T2D prevalence were age, poverty, foreign-born status, smoking history, and BMI. Filipino respondents were more likely to be U.S. born and had the highest smoking and BMI levels. Vietnamese respondents had the highest poverty levels.
**Conclusion.** Although the focal relationship between psychological distress and T2D was not significant in our overall sample, we found that the Filipino group had the highest prevalence of psychological distress and T2D. This emphasizes the importance of disaggregation to unmask greater disease burdens in Asian American ethnicities and highlights the need to treat mental and physical health through distinct culturally-tailored interventions.

**Reproductive health**

**Unplanned Pregnancy and Contraceptive use among Female Sex Workers During Covid-19 Pandemic** Ndirangu Ngunjiri* Ndirangu Ngunjiri

Unplanned pregnancies are associated with negative consequences, female sex workers (FSWs) are at very high risk of unplanned pregnancies. This study aims to determine contraceptive use and unplanned pregnancy among FSWs in developing countries. The main objective of the paper is to determine the prevalence of and factors associated with contraceptive use and unplanned pregnancy among female sex workers (FSWs) in developing countries. Primary data was obtained from the randomized quantitative survey from 900 female sex workers. The study targeted participants 18 years of age or older, who exchanged sex for money for the past month and worked in developing countries. Logistic regression models were used to assess factors associated with contraceptive use and unplanned pregnancy. From the findings of the 719 study participants, only 80 (11.13%) had planned pregnancies. Overall, 343 (47.71%) were regular alcohol users and 145 (20.17%) abused drugs; 102 (14.19.0%) had been raped in the last 3 years, and 150 (20.86%) of these accessed emergency contraception post-rape. Dual contraception use (condom and another modern method) was 58.0%. Having a non-emotional partner as a man who impregnated the female sex workers compared to an emotional partner was significantly associated with less planned relative to unplanned pregnancy, (aRR = 0.15 95%Cl =0.08, 0.30), so was lack of reported social support compared to support from friends, (aRR = 0.44; 95% CI = 0.22–0.87), keeping all factors constant in the model. Being raped (aRR = 0.51; 95% CI = 0.31–0.84) or abuse of substances (aRR = 0.65; 95% CI = 0.45–0.93) were significantly associated with lower ambivalence relative to an unplanned pregnancy. Of the many studies examining FSWs' sexual and reproductive health, very few measured unplanned pregnancy. Likely due to differences in study design, duration, and baseline population risk, but was high in most studies, representing a considerable concern for this key population. Evidence-based approaches that place greater importance on unplanned pregnancy prevention need to be incorporated into existing sexual and reproductive health programs for female sex workers. Structural interventions, such as increasing condom availability in workplaces, may be useful for reducing the burden of unplanned pregnancy.
Keywords: sex workers, unplanned pregnancy, Abortion, developing countries, Family planning

**Reproductive health**

**The Reproductive Health Law and Unmet Needs for Contraception among Filipino Women**
Miguel Antonio Estrada* Miguel Antonio Estrada Rutcher Lacaza Kent Jason Cheng

The Philippine Responsible Parenthood and Reproductive Health Act which guarantees universal access to reproductive health care services was passed in December 2012. Though scheduled to take effect in January 2013, it was not until January 2017 or three years after the 2014 Supreme Court ruling upholding the law's constitutionality when the President issued an executive order to fully implement the law, with the aim of achieving zero unmet needs for family planning. In this paper, we examined the effect of the RH law on Filipino women's unmet needs for contraceptives, focusing on educational attainment as a key dimension of RH disparities. Using the 2013 (base year) and 2017 (reform year) rounds of the National Demographic and Health Survey, we identified 22,345 sexually active and fecund women. Logistic regression results showed that women with (1) little or no formal education, (2) complete elementary and some high school education, and (3) complete high school education have 14%-37% higher odds of having unmet needs relative to those who have education beyond high school (reference group), after controlling for wealth, partner's education, and type of residence. Marginal effects pointed to a disparity-reducing effect of the law but only for women who completed elementary and have some high school. The law may not have had an impact on the least educated women.

**Social/relational factors**

**A Campus Crisis: An Investigation of Barriers to Food Pantry Use on a College Campus**
Jennifer Makealrski* Jennifer Makelarski Faiza Kazi Sarah S. Perry Alyssa A. Oue Annie W. Lin

Relative to all US households, the prevalence of food insecurity is higher among college students. Campuses have implemented food pantries but barriers to use of these pantries are poorly understood. We examined potential barriers to campus pantry use at a mid-sized, Midwestern university.

The campus food pantry opened 8/21 and was marketed via campus-wide emails. The pantry, open 7AM-9PM daily, is open access with no required sign-in or proof of need. Students were enrolled in this study 12/21-2/22 via an emailed survey link. The survey included items assessing food security (Hunger Vital Sign), knowledge of the pantry, dietary restrictions, interest in nutrition-related resources and an open-ended item about barriers to use. Differences by food security status were assessed using Chi squared statistics.

Participants (N=177) were predominantly 18-22 years old (67%), female (80%), non-Hispanic white (44%), undergraduates (74%) and living off-campus (69%). Only 4% of all students had used the pantry. One-third of students were food insecure in the past year and about two-thirds of these students experienced food insecurity in the last 30 days. Students with food insecurity had higher rates of dietary restrictions (38% vs 23%, p=0.03). Also, fewer food insecure students knew about the pantry compared to food secure students (30% vs 50%, p=0.01). Many students indicated they would feel "uncomfortable" using the pantry or that the choices would be unhealthy or not meet their dietary needs. Yet many students were "very interested" in other nutrition-related education including diet quality, food budgeting, preparation and weight loss (range: 40% to 51%); interest was similar by food security status.

Awareness, diet restrictions and stigma among food insecure students may be barriers to use of an open-access campus food pantry. Interventions that consider dietary restrictions and leverage interest in nutrition-related education may increase use of campus food pantries.

**Socioeconomic status**

**Perceptions of Racialized Economic Threat and Drug, Suicide, and Alcohol Mortality in the United States** Chris Lowenstein* Chris Lowenstein

Recent increases in midlife mortality due to drug overdose, suicide, and alcohol-related mortality (DSA) has generated enormous interest in identifying potential factors driving premature mortality in the United States. Studies examining the role of underlying economic factors on these "deaths of despair" remain mixed, and those that show significant effects are relatively small in magnitude. Motivated by the fact that increases in mortality for many causes of death have–until recently–been largely concentrated among non-Hispanic White (NHW) adults, recent work has added nuance to the "deaths of despair" narrative by considering how perceptions of declining social or economic status among non-Hispanic White adults may contribute to this rise in mortality.

This study tests this hypothesis using a shift-share instrumental variables (SSIV) framework that draws on demographic group-specific employment and mortality data at the county-level from 2010 to 2017. This post-Great Recession period was unique in that NHW employment recovered more slowly than that among non-Hispanic Black (NHB) and Hispanic adults. For example, the nationwide employment-population ratio increased by 5.3 percentage points (ppt) among NHB adults relative to only 1.0 ppt among NHW during this period.

Using instrumented two-way fixed effects (TWFE) and long difference (LD) panel models, I estimate the effect of own- and cross-group changes in a <u>standard</u> measure of employment (the county employment-population ratio, or EPOP) and a <u>relative</u> measure defined as the group-specific share of a county's total employment (or the *change* in that share in the LD model). Following an SSIV approach to overcome endogeneity in employment, I instrument for employment and relative employment changes using *predicted* measures constructed from sector-level, demographic group-specific employment data from the Quarterly Workforce Indicators (QWI).

Preliminary TWFE models show evidence of a statistically significant (albeit small in magnitude) procyclical relationship between own-group EPOP and drug overdose mortality among NHW adults, yet I find no evidence of significant cross-group or "spillover" effects due to changes in other groups' employment. Interestingly, models using the relative employment measure suggest that drug overdose and alcohol-related mortality among NHW adults *decrease* as the employment share of NHB and Hispanic adults increases, while the suicide rate increases. Preliminary estimation of the LD models do not replicate these findings, suggesting these effects may operate in the short-term rather than over longer time horizons. Anticipated future analyses will include assessing employment effects on non-fatal outcomes (e.g., suicidal ideation), testing robustness using alternate model specifications, and correcting for multiple hypothesis testing.

**Structural factors**

**Racial Inequities in Life Course Involvement in the Criminal Legal System** Katherine LeMasters* Katherine LeMasters Audrey Renson Jesse Edwards Whitney Robinson Lauren Brinkley-Rubinstein Brian Pence

Criminal legal involvement – arrests, charges, probation, incarceration – is often operationalized in population health research as ever having been incarcerated or as age at first encounter. Yet, involvement beyond incarceration is more common than incarceration and current involvement precipitates future involvement. Across the life course, involvement at all levels contributes to poor health and racial health inequities. The goal of this analysis is to characterize patterns of each type of adult criminal legal involvement across the life course and differences in pathways by juvenile involvement and race.

We used the National Longitudinal Survey on Youth 1997, a longitudinal data set of youth (baseline age: 12-17) followed into midlife (1997-2017). We explored patterns of criminal legal involvement over the life course and inequities by juvenile involvement and race using the mean cumulative count of the most severe encounter per study visit (increasing severity: arrest, charge, probation, incarceration). We addressed loss to follow-up with inverse probability of censoring weights.

Of 7,049 participants, 3,189 criminal legal encounters were reported among 1,718 individuals. "Low level" encounters were more common than incarceration, with a mean of 6 arrests, 30 charges, 7 probation encounters, and 10 incarceration events per 100 people by age 35. Among those with juvenile involvement, Black individuals had 139 encounters per 100 and non-Black individuals had 154; Black individuals had more arrests and incarceration stays than non-Black. For those without juvenile encounters, Black individuals had 60 encounters per 100 and non-Black individuals had 41.

The criminal legal system has a pervasive, long-term, and inequitable presence in our society. Future health equity research on the health effects of criminal legal involvement must consider encounters beyond incarceration, life course trajectories, and the profound racial disparities inherent in the system.

**Structural factors**

**Are perceived neighborhood characteristics associated with chronic pain in middle aged and older adults? Evidence from the US Health and Retirement study** Yulin Yang* Yulin Yang

Neighborhoods predict many health outcomes including functional limitations and disability; however, how neighborhoods are associated with chronic pain is relatively understudied. This study examines the associations between perceived neighborhood characteristics and chronic pain in a nationally representative sample of adults aged 51+ in the US. Among 14,069 participants (58.65% women; mean age 68.81) in the Health and Retirement Study (HRS, 2006-2008), we investigated how four subjective neighborhood characteristics—social cohesion, physical disorder, neighborhood safety, and neighborhood social ties—were associated with the odds of having moderate-to-severe limiting pain using adjusted logistic regression. After adjusting sociodemographic factors (age, gender, race/ethnicity, education, wealth, and marital status), residence in neighborhoods with high perceived social cohesion, safety, and more social ties was associated with lower odds of having moderate-severe and limiting pain (social cohesion OR=0.89; CI[0.86-0.91]; neighborhood safety OR=0.61; CI[0.53-0.69]; Neighborhood ties OR=0.76; CI[0.69-0.84]). Perceived neighborhood physical disorder did not predict the odds odd reporting moderate-severe and limiting pain (OR=1.00; CI[0.98-1.02]). Our study provides evidence that neighborhood characteristics could be one of the important social factors in predicting chronic pain.

**Violent Crime**

**National Institute of Health (NIH) Research Addressing Mortality Disparities in Fatal Injury among Racial and Ethnic Minority Adolescents and Young adults, 2009 – 2019** Maria-Isabel Roldos* Maria-Isabel Roldos Tilda Farhat

 The excess mortality burden due to violent fatal injuries is an urgent public health issue for adolescents and young adults, especially those from racial and ethnic minority populations. The purpose of this study is to examine NIH's research portfolio related to violent fatal injury between 2009 and 2019, with a focus on adolescents and young adults from NIH-designated populations experiencing health disparities, including racial and ethnic minority populations, less privileged socioeconomic status (SES) populations, underserved rural populations, and sexual and gender minorities (SGM).  Findings indicate that, over a period of 10 years, NIH funded 17 grants to study violent fatal injuries among adolescents and young adults from populations experiencing health disparities. Eleven were classified as etiology grants and sought to understand the determinants and pathways of violent fatal injury, four grants implemented intervention and two focused on surveillance.  Grants were further analyzed in terms of the populations covered, geographic location of the study population, type of research (etiology, intervention, methodology), type of determinants (using a social-ecological framework), and publications generated. Although important advances are evidenced, more research and support are needed to address the excess in mortality among ethnic and racial minority adolescents and young adults.