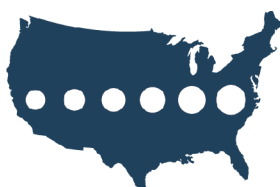


2022 Add Health Users Conference

July 11 – July 12, 2022

The Rizzo Center,
Chapel Hill, North Carolina

Abstracts



Add Health

The National Longitudinal Study of Adolescent to Adult Health

Breakout Session 1

Methodology Session 1: Contextual Data in Add Health

Existing Resources and Future Opportunities

Lauren Gaydosh, Ph.D., Assistant Professor of Sociology University of Texas at Austin

Longitudinal Considerations in Contextual Data Analysis

Iliya Gutin, Ph.D., Post Doctoral Scholar, Population Research Center, University of Texas at Austin

In this session, we will provide an overview of the existing contextual data available in Add Health. This will include data merged at various levels of geography, including state, county, and Census block and tract, as well as at the level of the school. We will also cover an empirical example of measuring contextual "despair" in discussing factors to consider regarding the longitudinal measurement and conceptualization of contextual factors as mechanisms. Finally, we will outline plans for Wave VI contextual data, and discuss opportunities for proposing your own ancillary study to add contextual data to Add Health.

Paper Session 1: Crime and Incarceration

A1.1 Structural Factors in Adolescence as Potential Predictors of Adult Criminality

Krysta Knox, University of Cincinnati

While some support has been found for the impact of structural factors on crime, there appears to be inconsistent evidence on the influence of such factors when analyzing by race/ethnicity. Although much research has assessed the impact of structural factors on criminal outcomes, most of this research has been relegated to macro-level assessments. Additionally, few of these assessments have taken a longitudinal approach. Given this, the current study assesses if, and how, a variety of structural factors present in adolescence influence criminal justice outcomes during the transition to adulthood and later adulthood. Further, the study tests the application of the racial invariance hypothesis by investigating potential differences in these outcomes by race/ethnicity. Data from the current study are derived from Waves 1 through 4 of the publicly accessible data of the National Longitudinal Study of Adolescent to Adult Health. Additionally, survey weights are used in the analyses to account for the deliberate oversampling in Wave 1. Negative binomial regression is used to examine the dependent variable of general criminal behavior at Waves 3 and 4, while logistic regression is used for the dependent variable of arrest measured at Wave 4. The key independent variables (i.e., structural factors) to be included in the analyses are low socioeconomic status measured at Wave 1, immigrant status measured at Wave 1, single-family household measured at Wave 1, a retrospective measure of residential mobility measured at Wave 3, a retrospective measure of parental incarceration measured at Wave 4, and respondent race/ethnicity measured at Wave 1. In addition, certain structural factors experienced in adulthood will be controlled for in an attempt to assess the more direct impact of structural factors experienced in adolescence on criminal behavior in adulthood. In order to assess the racial invariance hypothesis, analyses will be partitioned by race/ethnicity to better understand how the included structural factors impact each racial/ethnic group. It is expected that structural factors experienced in adolescence will have long-term impacts on respondent behaviors. Specifically, it is expected that these structural factors will negatively affect respondents' likelihood of engaging in criminal behavior in adulthood and their chance of ever being arrested. Finally, it is expected that there will be variance in these impacts between racial/ethnic groups. In other words, the examined structural factors will impact racial/ethnic groups differently.

A1.2 Criminal Labeling and Changes in Self-Esteem: The Transition from Adolescence to Adulthood

Logan Valenty, University of California, Riverside

Background

It is well-known that self-esteem increases during the transition from adolescence to adulthood. Yet, changes in self-esteem among individuals with a criminal label remains unknown.

Aims

To observe changes in self-esteem during the transition from adolescence to adulthood among individuals that have experienced criminal labeling. First, it is expected that individuals with a criminal label will experience decreases in self-esteem. Second, it is anticipated that individuals with the secondary label will be the main effect responsible for the decreases in self-esteem.

Methods

Respondents in The National Longitudinal Study of Adolescent to Adult Health public-use data (N = 4,815) were observed for changes in self-esteem that took place from Wave I (1994-95) to Wave III (2001-02). Changes in self-esteem refer to alterations in evaluating oneself, which are indicated by either increases or decreases in self-esteem. A 4-item Rosenberg Self-Esteem Scale measures changes in self-esteem. The scale reliability was .79 at Wave I and .81 at Wave III. The longitudinal survey data was collected through in-home interviews. Ordinary least squares (OLS) regression analysis investigates the relationship between criminal labeling and changes in self-esteem. A criminal label is an official conviction in an adult courtroom. The secondary label refers to two or more convictions in an adult courtroom.

Results

In agreement with the literature, the Add Health sample experienced increases in self-esteem during the transition from adolescence to adulthood ($p < .001$). However, individuals with a criminal label suffered decreases in self-esteem over time ($p < .05$), with the secondary label being the main effect that is ultimately responsible for the decreases in self-esteem ($p < .01$).

Conclusions

Criminal labeling appears to influence the trajectory of self-esteem during the transition from adolescence to adulthood, whereby decreases in self-esteem take place. This finding is particularly important, given that the typical trajectory of self-esteem involves increases during this time.



Abstracts

A1.3 Arrests and Physical Health Outcomes in Add Health Wave V

Denise Mitchell, University of North Carolina at Chapel Hill

A growing body of research focuses on the relationship between incarceration and health. However, less work focuses on whether other criminal justice contacts, including arrests, may be associated with US adults' health. I use Add Health Waves I, III, IV, and V to examine the association between arrests and physical health as measured by allostatic load at ages 34 to 44. I hypothesize that adults who report being arrested at Waves III, IV, or V will have higher allostatic load scores (i.e., poorer physical health) at Wave V than adults who do not report being arrested. My key independent variable is arrests, measured at Waves III, IV and V. My key dependent variable is allostatic load at Wave V. Allostatic load is a measure of cumulative wear and tear on physiological systems. I use the following biomarkers from the Add Health Wave V data in my allostatic load index: systolic and diastolic blood pressure, pulse rate, body mass index (BMI), waist circumference, total cholesterol, low- and high-density lipoprotein, triglycerides, hemoglobin A1c, and C-reactive protein (CRP). I control for demographic characteristics and behaviors that are associated with experiencing criminal justice contact or poorer health outcomes, including: age, nativity, parental educational attainment, delinquency, and parental incarceration. I conduct negative binomial regression analyses on the association between arrests and allostatic load, adjusting for demographic covariates, and then adjusting for covariates that address selection into criminal justice contact in various models. I report incidence rate ratios (IRRs) for each model, and account for Add Health's complex survey design and sampling weights in all models. I find that adults who have been arrested during the transition to adulthood (ages 18 to 26) have higher allostatic load scores in Wave V than their counterparts who have not been arrested. This finding suggests that arrests in early adulthood may negatively impact young adults' health later in life. If time permits and my subpopulation sample sizes are large enough, I will run stratified analyses to assess whether there are significant differences in allostatic load outcomes between White, Black, and Latino subpopulations.

A1.4 The Consequences of Paternal Incarceration for Youth's Expectations and Aspirations

Garrett Baker, Duke University

Children's future orientation—their expectations and aspirations—has a consistent and substantial effect on a variety of life course outcomes. However, little research to date has considered empirically how future orientation is shaped by adverse events such as experiencing a parent being incarcerated. I leverage the unique nature of Add Health's retrospective parent incarceration questions (from Wave IV) to compare the future orientation (measured at Wave I) of youth who already experienced paternal incarceration right before Wave I to the future orientation of youth who will experience it right after Wave I. This innovative analytic strategy—triangulated with a covariate-balancing propensity score methodology—allows me to account for selection bias and unobserved heterogeneity above and beyond typical observational methods in this area. Preliminary results indicate that paternal incarceration reduces youth future orientation by nearly a full standard deviation and are robust to a variety of models and specifications. Given that paternal incarceration is both increasingly common and unequally distributed, the large magnitude and causal nature of my results reveal a pivotal early life-course trap for disadvantaged youth and, subsequently, an important pathway through which mass incarceration has contributed to the intergenerational transmission of inequality in the U.S. in recent decades.

Paper Session 2: Mental Health

A2.1 Adolescents' Mental Health Among Chinese and Mexican Immigrants in the United States

Asiya Validova, University of Texas at San Antonio

Co-authors: Réne Zenteno, Ying Huang

Recent scholarship has stressed the importance of a comprehensive cross-national comparative perspective to examine variations on immigrant mental health and incorporate a social determinants of health approach to the study of immigrant populations. Using data from the National Longitudinal Study of Adolescent to Adult Health, this study focuses on the depressive symptoms of adolescents in immigrant families from China and Mexico to advance our understanding of mental health outcomes in specific migrant populations. We expand on the existing empirical literature by identifying differences in risk for adolescent emotional distress between immigrants from countries with a long history of immigration and racialization in the United States, on the one hand, and by carefully examining the role of migration-related stressors, family socioeconomic background, and protective and neighborhood factors on depression, on the other. We first examine the prevalence of adolescents' depressive symptoms by immigrant status, focusing on these ethnic groups. We then explore how stressors and protective factors operate in the Chinese and Mexican immigrant populations in comparison to native non-Hispanic white youth. Preliminary results indicate that emotional distress is only higher among adolescents in Mexican immigrant families. Language at home and perceived prejudice are significant migration-related factors accounting for higher depressive symptoms among adolescents regardless of the ethnic background of immigrants. In the case of Chinese youth with an immigrant experience, family socioeconomic background and protective and neighborhood factors mitigate emotional distress. Although family socio-economic background accounts for higher depressive symptoms of Mexican adolescents, after we control for all the risk and protective factors, depression levels among Mexican immigrant adolescents remain higher than among other groups. Our findings support the argument about heterogeneous effects of family background and protective and neighborhood factors for different nativity groups and highlight the importance of further exploration of potential risk factors among Mexican adolescents.

A2.2 The Long-Term Effects of Housing Insecurity on Physical and Mental Health in Young Adulthood

Mary K. Roberts, Pennsylvania State University

Co-authors: Andrew Fenelon

Economic hardship has a strong and well-defined link to negative mental and physical health outcomes among adolescents and adults. One type of economic hardship is housing insecurity, including being unable to afford rent or mortgage payments, homelessness, and eviction. We used The National Longitudinal Study of Adolescent to Adult Health (AddHealth) to examine the treatment effect of experiencing housing insecurity in young adulthood on long-term allostatic load, self-rated health, and depression. We used propensity score matching and mahalnobis distance matching to estimate the effect of experiencing housing instability at wave 3 on future physical and mental health (wave 4 & 5). We found that



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experiencing housing insecurity those who did had significantly higher depression at both future time points, significantly higher allostatic load and worse self-rated health at wave 5. These results indicate that housing insecurity has lasting impacts on individuals' mental and physical health even 15 years later.

A2.3 Prevalence and Risk/Protective Factors of Secondary Traumatic Stress among Helping Professionals

Samantha Meeker, Northeastern University

Co-authors: Beth Molnar

Helping professionals, including first responders, social workers, and therapists, can experience an occupational challenge known as vicarious trauma (VT) as part of their day-to-day work. VT is the exposure to others' traumatic experiences. Long-term consistent exposure to VT can lead to the negative impact of secondary traumatic stress (STS). STS symptoms may include intrusion, avoidance, arousal, and emotional numbing, as well as anxiety, depression, effects on one's ability to work, and others. VT/ STS has been mainly studied using cross-sectional studies of those in a single occupation. While this has provided a basis for understanding prevalence and risk factors, a longitudinal study of STS among multiple occupations commonly at risk for VT will provide a better understanding of this occupational hazard. Our study uses longitudinal data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) to understand the prevalence of symptoms and identify risk/protective factors associated with STS. For the purposes of this project, all 5 waves of Add Health will be utilized. Waves IV and V will determine the exposure to VT because professions are assessed better there than in the first 3 waves. Waves I, II, and III will provide data on preexisting factors that may impact participants' symptoms or risk/protective factors. These include background/demographic information, employment history, social support, feelings and experiences, and health and healthcare history. The study population for our analysis includes participants who we will classify as potentially exposed to VT and at risk of STS based on their stated profession being on a list of professions commonly exposed to others' traumatic stories. Those who are or have ever been in the military were dropped from the analysis due to increased risk for STS symptoms during their service. The outcome for this analysis is an STS proxy variable we created based on the Secondary Traumatic Stress Scale and the Posttraumatic Diagnostic Scale. Our study analyzes the prevalence of STS and the risk/protective factors using logistic regression. A 95% confidence interval is used for all measures as well as sample weights based on Add Health's "Guidelines for Analyzing Add Health Data." We found that among the participants in the Wave V dataset, 429 were in jobs we categorized as higher risk for experiencing VT. Among these, 20% had been diagnosed with depression, 7% with PTSD, and 17% with anxiety. We also found in the 7 days preceding taking the survey, being sad or feeling depressed were endorsed by up to 40%. We will report on our estimate of the prevalence of STS among helping professionals compared with that of the full sample. We also expect that certain demographics such as being female and experiencing previous direct trauma will be risk factors for developing STS, while factors such as social supports will be protective factors. Having workplaces be vicarious trauma-informed can help ease the occupational challenge and protect workers from developing STS. These findings will provide evidence for the need for organizations to take steps to put these supports into place.

Breakout Session 2

Methodology Session 2: Investigating Racialized Inequalities in Add Health

Measures of Race/Ethnicity in Add Health

Taylor Hargrove, Ph.D., Assistant Professor, Department of Sociology, University of North Carolina at Chapel Hill

Skin Tone and the Health Returns to Higher Status Among Black Americans

Reed DeAngelis, Ph.D. Student, Department of Sociology University of North Carolina at Chapel Hill

Interrogating the Life Course Origins of Racialized Health Inequalities

Courtney Boen, Ph.D., Assistant Professor, Department of Sociology, University of Pennsylvania

Using Novel Measurement Approaches to Operationalized Structural Racism

Joëlle Atere-Roberts, Ph.D. Student, Department of Epidemiology, University of North Carolina at Chapel Hill

Paper Session 3: Employment and Socio-Economic Status

A3.1 Employment Quality, Self-Rated Health and Mental Health Among Working Americans

Grace Venechuck, University of Wisconsin-Madison

The gap between high and low-quality employment in the United States continues to widen, with a higher proportion of women and minorities in low-quality jobs. The implications of low-quality employment have far-reaching and complex consequences for worker health. Although the relationship between job characteristics and a vector of health measures has been well-documented, studies of work and health tend to focus on the isolated effects of a given characteristic on health. Given that employment characteristics endemic to high- and low-quality employment tend to cluster, a typological approach may provide new insights into the work-health relationship. This study uses a typological measure of employment quality to explore the relationship between different employment typologies and two complimentary measures of health: mental health and self-rated health. Of particular interest is the distribution of women and minorities across these typologies, and whether health disparities can be seen within typologies as well as across them.

A3.2 Cultural Cultivation and the Intergenerational Transmission of Resources: The Association Between Extracurricular Activities and Income Mobility

Kamma Andersen, University of Western Ontario

Co-authors: Kim Shuey, Howard Ramos



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Parents' resources affect children's social and cultural capital, which in turn is associated with academic attainment and labour market outcomes in adulthood (Bourdieu 1973; Pfeffer 2014; Roska & Potter 2011). Middle- and upper-class parents transmit their social class through a process of cultural cultivation by providing resources to children that will help them succeed socially and academically (Lareau 2002). This may include enrolling children in sports, activities, and clubs outside of school. Research suggests that involvement in extracurricular activities may be a mechanism of stratification, with extracurricular activities contributing to social, cultural, and human capital by allowing students the opportunity to build non-academic, social, and political skills and create social networks. But to what extent is participation in extracurricular activities associated with academic success, and are particular activities and patterns of participation more closely tied to patterns in labour market trajectories? Do the benefits of engagement in activities differ based on parent's social class and race/ethnicity? Using longitudinal data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), this paper explores adolescent involvement in extra-curricular activities as a mechanism for the intergenerational transmission of resources. We use data from Wave I to measure the respondent's extra-curricular involvement in childhood and adolescence, including socioeconomic and school context. This data is linked to income and occupational outcomes at Wave IV, when the respondents are adults. Data from the Add Health Parent Study and from indicators such as the Social Origins Score are used to measure early life advantage and disadvantage and to construct patterns of social mobility in adulthood. Preliminary ordinary least squares regression models indicate that playing team sports in adolescence interacts with parental resources to affect income in early adulthood. While there was no evidence that sports affects personal income in adulthood for children of low-income families, as parental income rises, participation in team sports had an increasingly positive association with income for both men and women. These preliminary findings suggest that children from higher socio-economic backgrounds may translate extracurricular experiences into valuable cultural and social capital with benefits for income in adulthood. In contrast, these experiences may not be an effective vehicle for social mobility among working class families. Next steps will look beyond sports to understand how patterns of participation in various forms of extracurricular activities are associated with later life educational attainment, income, and occupational prestige and the potential role of these activities as a mechanism for the intergenerational transmission of social class.

A3.3 Party On: The Labor Market Returns to Social Networks and Socializing

Veronica Sovero, University of California Los Angeles, San Francisco State University
Co-authors: *Adriana Lleras-Muney, Matthew Miller, Shuyang Sheng*

We investigate the returns to friendships during adolescence on wages in adulthood. We develop a model where homophily (the similarity between individuals) and coordination play crucial roles in the decision to socialize and study, which in turn determine educational attainment, and network formation, which ultimately payoff in the labor market outcomes. Our model implies that both education and the number of friends are potentially correlated with the error term in wage regressions. To address this, we implement a novel procedure that assumes the returns to schooling range from 5 and 15%, and instrument for friendships using homophily measures to obtain bounds on the returns to friendships. Using data from the Add Health longitudinal surveys, we document that individuals make investments to accumulate friends and other forms of social capital. We then estimate that having one more friend in adolescence has an impact on wage earnings that ranges between 4 and 10%, comparable to a broad set of estimates of the return to an additional year of schooling. These effects are likely mediated by the improved social skills of individuals with many friends in adolescence, who are more likely to be extroverted as adults and take on managerial positions in the labor market.

A3.4 Social Capital and the Academic Achievement of American Students

Emiola Oyefuga, Virginia Commonwealth University

Using data from Waves I, II, and IV of the National Longitudinal Study of Adolescent to Adult Health (Add Health) this study explores how the domains and types of social capital make a difference to educational outcomes in higher education. In recent years, especially after the publication in 2000 of Robert Putnam's book "Bowling Alone: The Collapse and Revival of American Society", there has been a heightened interest in the concept of social capital. Many scholars have made the connection between social capital and education by examining its effects on educational outcomes. However, a lot still needs to be understood. This study aims to provide a better understanding of the influence of social capital on the higher education academic achievement of American students nationally. The study examined the effect of social capital on the lives of children in the K-12 environment using college completion or degree attainment as the outcome variable. The independent variables included school and neighborhood social capital, as well as race/ethnicity, gender, children's agency, and socioeconomic status. The longitudinal design of Add Health data allows for extracting a large number of variables to represent the different domains of social capital. Variables that correlated appropriately with the networks, reciprocity, and trust inherent in social relationships were isolated to represent school and neighborhood social capital. Cross-classified multilevel models were used to analyze the data to determine which domains of social capital are the strongest contributor to college graduation. The models also examined if gender, racial identity, and children's agency influenced the relationship. This study, to my knowledge, is the first to use a multilevel model approach and longitudinal data to examine several contextual social capital factors simultaneously. Using a multilevel approach allows variables on different levels to be analyzed and the interaction between these levels to be observed (Hox & Maas, 2005) which provides a better way to understand some of the effects of society, which may take time to occur, in education. The findings of this study add to the existing theory of social capital and academic achievement in America and have the potential to inform the current education policy environment in the United States and globally.

Paper Session 4: Genetics

A4.1 What We've Learned from Add Health Genetic Data

Robbee Wedow, Broad Institute of MIT and Harvard
Co-authors: *Kathleen Mullan Harris*

Since the release of the genotyped data in the National Longitudinal Study of Adolescent to Adult Health, scholars have used this dataset in conjunction with other datasets to gain much understanding about the genetic underpinnings of complex social and behavioral outcomes. In this presentation, I will highlight what these important findings have been, using both my own work and the work of others in the field. I will focus a bit on the technical aspects of the data itself, and then will focus substantively on educational attainment, smoking and drinking behaviors, risk-taking



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behavior, same-sex sexual behavior, social mobility, and insights gained by using the sibling data in conjunction with the genetic data. I will also focus on new work examining the obesogenic environment as participants age into the new Wave V measurement period. In sum, this presentation will demonstrate how important the Add Health genetic data has been for our understanding of sociogenomics and gene-environment interplay.

A4.2 Estimating Genetic Nurture Effects in Polygenic Scores for Trajectories of Antisocial Behavior

Brooke Sasia, University of Wisconsin - Madison

Co-authors: Qiongshi Lu, Yuchang Wu, James J. Li

Antisocial behaviors (ASB) are characterized by aggressive and non-aggressive rule-breaking behaviors. Despite being highly heritable, little is known about how genetic influences impact development of ASB over time. For example, polygenic scores (PGS) for ASB, which characterize aggregate effects of genetic risks underlying externalizing behaviors (EXT; e.g., risky behaviors, substance use, hyperactivity), have been shown to explain 10% of the variance in EXT across various population-based datasets (Karlsson Linnér et al., 2021). However, a substantial proportion of this effect may be operating through the environment, a phenomenon known as genetic nurture (Kong et al., 2018). Thus, it is possible that PGS effects for heritable complex traits like ASB may be overestimated. Additionally, while some studies have examined ASB over discrete periods, examining ASB from a truly developmental perspective is important because not everyone exhibits ASB to the same degree or severity. Examining ASB developmentally also matters in the context of genetics, as heritability of ASB can differ based on trajectory. Our study employs a longitudinal approach to examine the extent to which genetic nurture effects play a role in PGS associations for ASB. We used five Waves of data from Add Health, spanning ages 13 to 41, using five ASB items measured at each wave. We identified 4 trajectories using growth mixture modeling: Moderate (18.9% in this group), Low (67.0%), High Decline (3.6%), and Adolescence-Peaked (10.6%). Then, we examined associations between PGS for EXT and membership in each ASB trajectory using multinomial logistic regression, where the Low group served as the reference. PGS were associated with increased risk of membership into all groups, but primarily the High Decline, followed by Moderate, and then the Adolescence-Peaked trajectory. Then, we conducted tests of mediation by examining the extent to which associations between PGS and High Decline and Moderate trajectories were mediated by supportive parenting (e.g., closeness, warmth), which we used as a proxy variable for genetic nurture effects. We found evidence of mediation in these models, suggesting genetic nurture is likely contributing PGS associations. These preliminary results provide confidence in the success for the next step of our research, which is to estimate both direct and indirect (i.e., “genetic nurture”) effects in the PGS by leveraging family data (i.e., parents, siblings, and self) in the UK Biobank. We will employ a statistical framework called DONUTS (Wu et al., 2021) which leverages family data by generating two sets of GWAS for EXT: one for offspring (GWAS-O), one for parents (GWAS-MP). These data will then be modeled using multinomial logistic regression and mediation models to test the hypotheses that the indirect effects PGS should be mediated by supportive parenting (as it should reflect genetic nurture effects), while the direct effects PGS should have reduced mediation (given it reflects inherited genetic influences). Upon completion of this work, we expect to produce novel PGS for ASB that disentangle environmental signals from genetic ones. We will conduct parallel analyses to validate these PGS. Accounting for environmental signals in PGS will have powerful consequences for developmental psychopathology research, as studies of gene-environment interactions have long been confounded by the always present influence of gene-environment correlations. We will employ a statistical framework called DONUTS (Wu et al., 2021) which leverages family data by generating two sets of GWAS for EXT: one for offspring (GWAS-O), one for parents (GWAS-MP). These data will then be modeled using multinomial logistic regression and mediation models to test the hypotheses that the indirect effects PGS should be mediated by supportive parenting (as it should reflect genetic nurture effects), while the direct effects PGS should have reduced mediation (given it reflects inherited genetic influences). Upon completion of this work, we expect to produce novel PGS for ASB that disentangle environmental signals from genetic ones. We will conduct parallel analyses to validate these PGS. Accounting for environmental signals in PGS will have powerful consequences for developmental psychopathology research, as studies of gene-environment interactions have long been confounded by the always present influence of gene-environment correlations.

A4.3 The Causal Effect of Physical Activity on Health in Early Adulthood: A Gene By Environment Instrumental Variables Approach

Ivan Tzintzun Valladolid, Paris School of Economics

Objective

This article explores the effect of Leisure-Time Physical Activity (LTPA) on subjective health status and the development of non-communicable diseases (NCDs) during early adulthood. A novel contribution of this article is that it studies the potential existence of heterogeneous effects of LTPA on health. To do so, I analyse two different subpopulations of individuals based on their level of physical activity at work: sedentary workers (e.g. those with very low levels of PA during work-time) and heavy-PA workers (e.g. those with work routines that are physically demanding).

Method

The article uses AddHealth longitudinal data in two different ways. First, to deal with a potential endogeneity bias, I use an index of genetic risk for physical activity as a source of exogenous variation to provide novel evidence on the effect of LTPA on health. Moreover, the identification strategy uses a fixed effect strategy by exploiting the interaction of the genetic index with exogenous contextual variables that are time-changing (e.g., size of parks close to individual's households, weather at time of interview). Second, based on Standard Occupational Classification in wave 3 and self-reported measures on PA at work, I classified jobs in two groups, heavy or sedentary.

Results

Results suggest that LTPA has a significantly positive effect on subjective health status and has a negative effect on the number of NCDs. Lastly, the heterogeneities analysis shows that only sedentary workers experience a positive effect on health by increasing their LTPA, while heavy-PA workers do not benefit by additional LTPA. This suggests a substitution effect of PA at work and LTPA. Discussion: Such results raise interesting policy implications on how to successfully design an intervention to increase PA levels with the aim of increasing health benefits for the population: the main takeaway is that policy-makers should account for the different dimensions which characterise PA (e.g. PA at work, LTPA, sedentary behaviours at home, passive/active commuting, etc.), since individuals' capacity to benefit from such policies is unequal depended on such dimensions.



Abstracts

A4.4 Intergenerational Mobility and Childhood Obesity: An Instrumental-Variable Approach Using Genetic Information

Yanhong Jin, Rutgers, The State University of New Jersey

Co-authors: Maoyong Fan, Man Zhang

The United States has a reputation of being the land of opportunities as many families and children achieve their “American Dream” through hard work regardless of their sociodemographic background and economic status. The “American Dream” requires socioeconomic mobility across generations, geographic areas, and different social, cultural, and economic backgrounds. Intergenerational mobility is an important indicator and driving force of economic efficiency and equity in society, but the United States faced declining mobility in the past several decades, especially among people of low socioeconomic status. This study represents the first economic study examining how childhood obesity affects intergenerational economic and social mobility. We use Waves I and V of ADD Health along with the Opportunity Atlas of the United States. This unique dataset allows us to observe a detailed growing path of individuals and measure their economic and social mobility over time. Using a novel instrument variable (IV) based on genetic markers collected in Wave IV, we find that childhood obesity reduced the probability of climbing up the income ladder by 33 percentage points. Given the probability of upward intergenerational income mobility for normal-weight children (38%), childhood obesity almost eliminated the chances of climbing up the income ladder. We also find childhood obesity reduced the chance of moving to a neighborhood with greater economic opportunities measured by the changes between adult children in Wave V and their parents in Wave I in the following aspects: the mean household income percentile rank in the national distribution (6.4 percentage points lower), the probability of reaching the national top quintile income level (6.7 percentage points lower), and the probability of living in a neighborhood with less than 10% poverty rate (17.1 percentage points lower). Similarly, we find that childhood obesity eliminates the chance to move to a better neighborhood. We also examine channels through which childhood obesity negatively affects intergenerational mobility. Childhood obesity is found to adversely affect adulthood outcomes in education, health, and job selection. The study provides strong evidence for the causal effects of childhood obesity on intergenerational mobility. It helps to explain the geographical overlapping of high obesity prevalence and low social and economic mobility in the United States. It implies that interventions and policies of childhood obesity can improve economic mobility and equality for generations to come. This study proposes a novel regression approach to use genetic information to construct an IV for weight status based on the latest Polygenic Scores (PGSs) related to BMI, intelligence, cognition, and education attainments for ADD Health participants. We regress BMI PGSs on intelligence, cognition, and education PGSs and take residuals of the regression to avoid the Pleiotropy problem. We then use the residualized BMI PGSs as the IV for childhood obesity. The newly constructed IV is well behaved and passes various validity tests. This study reinforces the validity of using genetic information to identify and quantify causality in social science and suggests great room for economists to examine economic issues using the evolving genetic information.

Breakout Session 3

Methodology Session 3: Measuring Cognitive Function and Risk Factors for Alzheimer's Disease (AD) and AD Related Dementias (AD/ADRD) in Add Health

Constructing Variables of Cognitive Function and Risk Factors for AD/ADRD in Add Health

Allison Aiello, Ph.D., Add Health Wave VI Deputy Director, Columbia University

Modeling Trajectories of Cognitive Function Across the Life Course: Integrative Data Analysis (IDA) Combining Add Health and Other Cohort Studies

Yang Claire Yang, Ph.D., Professor, Department of Sociology, University of North Carolina at Chapel Hill

Contextual and Longitudinal Data Approaches for Understanding Change in Cognitive Function

Chantel Martin, Ph.D., Assistant Professor, Department of Epidemiology, Gillings School of Global Public Health, Faculty Fellow, Carolina Population Center, Co-Director of Cardiopulmonary Research, Center for Environmental Health & Susceptibility, University of North Carolina at Chapel Hill

This session will cover the measures and several examples of applied studies of cognitive function and Alzheimer’s Disease (AD) and AD related disorders (AD/ADRD) risk factors in Add Health. In the first presentation, we will cover the various measures of cognitive function available in Add Health from adolescence to adulthood. In addition, we will briefly describe how to create new measures related to cognitive function and AD/ADRD risk. Further, we will briefly describe new and upcoming measures of cognitive, physical, and sensory function in Add Health Wave VI. The second presentation will discuss the results of an Add Health project that aims to model risk factors for cognitive function across the life course by combining Add Health with several other large scale longitudinal cohort studies. This study integrates four national population-based longitudinal panels extending from adolescence to old age, including Add Health, Midlife in the United State (MIDUS), Health and Retirement Study (HRS), and Americans Changing Lives study (ACL), to model age trajectories of cognitive function over the life course and examine gender, race/ethnicity, and education differences in cognitive trajectories. The third presentation will describe the process of creating life course contextual and neighborhood level data and how to link these constructed contextual variables with measures of cognitive function and AD/ADRD risk in longitudinal studies of Add Health.

Paper Session 5: Familial Relationships and Parenting

A5.1 Race-Ethnic Differences in Step- Versus Biological Parent Support to Adult Children and Grandchildren

Corrine Elizabeth Wiborg, Bowling Green State University

Greater longevity increases the potential share of later life that individuals spend as a parent or grandparent (Margolis 2016; Margolis and Verdery 2019; Wachter 1997). In addition, changes to marital stability raise the possibility that stepparents and step-grandparents may become an important role for many older adults. Although prior research has demonstrated that step-parenthood and step-grandparenthood are more



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common among racial and ethnic minorities, we know less about the responsibilities of these roles across racial/ethnic groups. Using data from the 2015-2017 Add Health Parent Study (AHPs), this study examines racial/ethnic differences in step- versus biological parent support of adult children and grandchildren. Specifically, the study assesses instrumental and financial support from parents to their adult children who are also parents, and thus offers a measure of indirect support to grandchildren. Additional analyses examine direct grandparent to grandchild support via anticipated childcare availability. Findings from this study will contribute to the broader literature on family complexity and racial/ethnic differences across kinship networks and speaks to the safety net supports that exist across the growing diversity of American families.

A5.2 Parental Health and Adult Children's Romantic Relationship Outcomes

Xing Zhang, Arizona State University and Grand Valley State University
Co-authors: *Anna Hammersmith*

Parents play an integral role in supporting children on the road to adulthood, especially as the entry into adult roles has become increasingly delayed in recent decades. However, according to AARP, many young people also provide support to aging parents facing difficulties, such as declining health. Thus, parental health problems may further delay children's transitions into adulthood as children may receive fewer resources from parents. At the same time, children may direct more of their own resources toward aging parents, possibly inhibiting their acquisition of adult roles. Using data from Waves I and V of the National Longitudinal Study of Adolescent to Adult Health and the Add Health Parent Study, we examine how parent's physical health (operationalized by ADL limitations) is associated with their adult children's romantic relationship outcomes (single, cohabiting, and married). We also explore how these relationships vary by gender. Preliminary findings suggest poorer physical health reported by parents may be negatively linked to adult children's likelihood of marriage. Frequency of contact and closeness between parents and children as well as measures of upward and downward transfers of instrumental support were also associated with adult children's romantic relationship outcomes.

A5.3 The Effects of Having a Same-Sex Co-Twin on Risky Health Behaviors During Adolescence

Eunju Lee, University of California, Davis

This paper examines how the sex of a sibling affects risky health behaviors during adolescence, exploiting a sample of dizygotic twins. The twin research design helps me to circumvent the selection bias stemming from parental preferences on children sex composition. It also helps to observe the sibling gender effects separately from birth order effects. I find that males with a male co-twin are more likely to be engaged in risky health behaviors than males with a female co-twin. The result is consistent with the channel of sibling peer effects.

A5.4 Parenting pathways and Adolescence Health Lifestyle Trajectories

Matthew Stackhouse, University of Western Ontario

Background:

Health lifestyles are behavioural patterns that are the result of knowledge, beliefs, and norms about what constitutes healthy, stress-relieving, or pleasurable behaviours.

In other words, health lifestyles are collective patterns of health-related behaviours based on individual choices made within structural contexts. The role of parenting practices is an often-neglected piece for further understanding an offspring's health behaviour development over time. While interdisciplinary work finds associations between parenting practices and individual health behaviours, single-item health behaviour measures do not capture the entire phenomenon.

This is because health behaviours tend to coalesce and influence one another. Previous research examining health lifestyle patterns over the life course find that less healthy lifestyles to be associated with poor physical health and are patterned by socioeconomic characteristics in early life. However, research has yet to observe how social pathways of parenting pattern children's health lifestyle trajectories. In this study, I investigate the influence of parenting practices on stability and change in health lifestyle trajectories from adolescence to adulthood.

Hypotheses

1. Positive and structured parenting will predict healthier lifestyle trajectories. 2. Positive and structured parenting will be associated with greater stability in healthier lifestyles. 3. Adolescents who engage in riskier health lifestyles will have a higher probability for transitioning to healthier lifestyles if exposed to better parenting strategies. 4. Ineffective parenting practices will associate with riskier health lifestyles and offspring will experience continuity in their health lifestyle trajectories.

Research Plan

Using the National Longitudinal Study of Adolescence to Adult Health survey (ADD Health), I will measure parenting in Wave I and capture health behaviours from wave I through wave V. I will use parenting indicators such as child's bedtime, involvement with schoolwork, teachers, and the child's school, and relationship quality. I will measure health lifestyles using several health behaviour indicators during adolescence and young adulthood including: binge drinking, smoking, diet, physical activity, cannabis use, and healthcare variables such as doctor and dental visits. I will use latent class analysis (LCA) to identify parenting practices and run a subsequent latent transition analysis (LTA) to observe how pathways of child-rearing strategies influence stability and change in children's health lifestyles in their transition from adolescence into adulthood. LTA – an extension of LCA – affords the ability to estimate how change occurs between latent health lifestyle classes over time. LTA estimates the probability of transitioning from one latent class in a time period (wave IV) to another latent class in the next (wave V). Results are expected to correspond with the hypotheses, suggesting that positive and structured parenting practices are pathways that influence offspring's healthier lifestyle development across various life stages.

Paper Session 6: Stress

A6.1 Pre-pregnancy Allostatic Load and Subsequent Adverse Birth Outcomes: A Latent Class Analysis Approach

Megan Barry, University of South Florida

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Introduction

Preterm birth (birth at less than 37 weeks of gestation) and low birth weight (less than 2,500 grams) are the leading causes of infant morbidity and mortality in the United States. Black women are much more likely to have preterm (14.4%) and low birthweight (14.2%) births than White women (9.3% preterm; 6.9% low birthweight). A recent review paper concluded that racism, working through multiple pathways and biological mechanisms, is the major upstream contributor to the persistent Black-White disparity in preterm birth. This conclusion dovetails with The Weathering Hypothesis, which suggests that racism, and associated cumulative life stressors, “weather” persons of color more quickly than White individuals. Allostatic load is useful in characterizing the cumulative weathering of multiple biological systems caused by stressors. Two studies have explored the association between variable-centered measures of pre-pregnancy allostatic load and subsequent birth outcomes; both found no association. Methods

We used data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) to group non-Hispanic White (n=666) and Black (n=131) women ages 24-34 into latent classes based on pre-pregnancy biomarkers of allostatic load. Our latent classes are built from 10 biomarkers taken at Add Health Wave IV: body mass index (BMI), waist circumference (WC), systolic and diastolic blood pressure (SBP, DBP), pulse rate, glycohemoglobin (HbA1c), total cholesterol, high-density lipoprotein, triglycerides, and c-reactive protein. Allostatic load class membership and other maternal- and infant-level covariates were then included simultaneously as predictors of three separate dichotomous outcomes: preterm birth, low birth weight, and macrosomia in multilevel logistic regression models (n=1,083 White infants; 177 Black infants). In a separate multilevel linear regression model, the same variables were simultaneously entered to predict continuously measured birthweight. All birth data are based on mother’s report in the Add Health Wave V survey and reflect births after Wave IV, when biomarkers were collected.

Results

Stratified analyses yielded four latent classes among White women, characterized by: 1) high SBP and DBP (19% of the sample), 2) high BMI and WC (17%), 3) high total cholesterol and triglycerides, and low high-density lipoprotein (9%), and 4) low-risk (54%), and two latent classes among Black women, characterized by: 1) high BMI and WC, and moderate-risk blood pressure, HbA1c, and c-reactive protein (50%), and 4) low-risk (50%). In multivariate multilevel models, infants born to White women in the high-risk BMI and WC class, as compared to the high-risk SBP and DBP class, had higher birth weights (beta = 179.93; CI: 17.04, 342.41). There were not significant associations between latent class membership and birth outcomes in the other multivariate models.

Discussion

The finding that White women in the high-risk BMI and WC class, compared to the high-risk SBP and DBP class, had infants with higher birth weight is consistent with previous findings that: heavier mothers have heavier infants and chronic maternal hypertension is associated with increased likelihood of having a low birthweight infant. Additional research is needed to help understand the complex biological and social mechanisms underlying disparities in birth outcomes and identify prevention strategies.

A6.2 Timing of Adversity and the Heterogeneity in the Allostatic Load Profiles in Adulthood across Race/Ethnicity

Jiwon Lee, Yonsei University

Co-authors: Hyoun K. Kim, Nihaal Khan Rahman, Ju Hyun Song

Exposure to stress is known to confer long-term implications for individuals’ health through the wear and tear on the allostatic regulatory systems (Guidi et al., 2021). Despite the cumulative evidence of health disparities related to life stress exposure as well as allostatic load (AL) (Borrel et al., 2020), few studies empirically examined characteristics of different profiles of AL during adulthood and individual differences in the association between AL profiles and stress across different race/ethnic groups. Furthermore, differential effects of stress in different developmental periods (childhood/adolescence versus young adulthood) associated with different profiles of AL have not been examined systematically. To address these gaps in the literature, this study seeks to examine the following using biomarkers collected at Wave V: 1) Characterizing heterogeneity of AL profiles in adulthood across different race/ethnic groups (Whites versus non-Whites). 2) Testing and comparing the primacy and recency effects of exposure to stress associated with different profiles of AL. For the purpose of the present study, we used Waves I - V from the National Longitudinal Study of Adolescent Health (Add Health). First, we used Wave V data (N = 9,129, ages 31-42) and conducted a latent profile analysis (LPA) in R (R Core Team, 2014) to identify distinctive profiles of allostatic load (AL) in adulthood. We included seven biomarker indicators reflecting the functions of the Hypothalamic-Pituitary-Adrenal (HPA) axis, sympathetic nervous system, and metabolic processes (i.e., plasma cortisol, SBP, DBP, Cholesterol, HDL, HbA1c, WHR; Seeman et al., 2001; Figure 1). As shown in Figure 2, three distinct profiles were identified (AIC = 4518.37, BIC = 46452.52, Entropy = 0.78; BLRT p < .05): Low AL (48.55%), Cumulative AL without metabolic risks (32.00%), and Cumulative AL with metabolic risks (19.45%). Based on these profiles, we will conduct multigroup LPA using the “knownclass” function in Mplus (Muthén & Muthén, 1998-2017) to identify profiles across different ethnic groups (Whites vs. non-Whites). We will then examine how exposure to life stress (e.g., maltreatment, adverse family relations, interpersonal conflict, and poverty) from childhood/adolescence versus young adulthood affects the AL profiles by race/ethnicity. Data for individuals’ life stress during childhood/adolescence will be taken from Waves I - III and life stress during young adulthood from Wave III -IV. We expect to find that the relations between life stress and profiles of AL would vary across race/ethnicity groups, reflecting their different sociodemographic conditions. By taking full advantage of all five waves of Add Health data, especially biomarker data, the present study can help better understand heterogeneous AL profiles in adulthood and its association with life stress exposure at different periods in development. Additionally, the present findings will contribute to the literature by investigating the primacy and recency effects of exposure to life stress associated with differential profiles of AL. Finally, by examining AL profiles in relation to race/ethnicity, the present findings can guide intervention efforts to reduce disparities in health-related risks associated with different sociodemographic conditions (Adler & Newman, 2002).

A6.3 Does Subjective Social Status Mediate the Relationship Between Ethnoracial Identity and Allostatic Load Across Adulthood?

Nafeesa Andrabi, University of North Carolina at Chapel Hill

Allostatic load is the physiological cost of chronic or repeat stress exposures that activate the body’s stress response and may indicate later-life mortality risk and disease burden. In the US, minoritized ethnoracial groups sustain high levels of chronic stress as a result of white supremacy that gets under the skin to create considerable health disparities. Perceptions of these stressors and one’s social context may disrupt the mechanism behind allostasis. MacArthur Subjective Social Status (SSS) scale captures the self-appraisal of status or perceived ranking in the social hierarchy.



Abstracts

To date, few studies of allostatic load have focused on how SSS and changes in SSS may impact health risk across the life course; no studies have examined the mediating role of SSS in the association between ethnoraical identity and allostatic load. This study builds on previous research by examining a large, longitudinal sample of nationally representative US population with rich biomarker data. RQ1: To what extent is the change between early adulthood (Wave IV) and adulthood (Wave V) SSS associated with allostatic load in adulthood (Wave V)? I hypothesize that increases in SSS between early adulthood and adulthood will be associated with lower allostatic load in adulthood. RQ2: Is the relationship between early adulthood SSS and adulthood allostatic load mediated by ethnoraical identity? I hypothesize that the relationship between ethnoraical identity and adulthood allostatic load is mediated by early adulthood SSS; lower SSS in early adulthood will be associated with higher allostatic load in adulthood for White, Asian and Hispanic adults but not for Black adults. 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) including biomarker data collected in a subsample of adults (N=5,381) from the National Longitudinal Study of Adolescent to Adult Health (Add Health). I calculate allostatic load scores based on respondent's values for 16 metabolic, cardiovascular, and inflammatory biomarkers measured at Wave V when respondents were 34-44 years old. I use the MacArthur Scale of Subjective Social Status from Wave IV and V and construct an SSS change variable (Wave V SSS - Wave IV SSS). Relevant covariates from Wave 1 and Wave IV include biological sex; ethnoraical identity; age; nativity; parental education; respondent's educational attainment; self-rated health; recency of a doctor's visit. First, I examine the association among Wave V allostatic load scores, Wave IV SSS, and SSS change using univariate statistics. I use multivariate linear regression to estimate the main effects of SSS change on Wave V allostatic load, net of controls. Lastly, to test for ethnoraical identity as a mediator of Wave IV SSS and Wave V AL, I conduct several regression analyses and examine the significance of the coefficients at each step using the Baron and Kenny (1986) approach. In preliminary analyses, I find that lower SSS in early adulthood is associated with higher allostatic load and thus increased physiological distress in adulthood. Decreases in SSS across the life course are associated with increased allostatic load in adulthood.

Breakout Session 2

Methodology Session 4: Genomics Data

Polygenic Scores in Add Health

David B. Braudt, Ph.D., Research Scientist, Center for Health Outcomes and Population Equity (HOPE), Huntsman Cancer Institute, University of Utah

The Genomics Data of Add Health

Brandt Levitt, Ph.D., Add Health Senior Genomic Data Scientist and GWAS Data Coordinator, University of North Carolina at Chapel Hill

The National Longitudinal Study of Adolescent to Adult Health (Add Health) has released both genotyped data and polygenic scores for approximately 10,000 participants. Recent genotyping efforts have added another 2000 participants to this existing data set. These data products provide researchers with the ability to conduct biosocial analyses by combining the depth and breadth of phenotypic information contained in Add Health with genetically informed measures. This session will describe the Add Health genetic data and polygenic scores, as well as a few examples of uses of the data from recent publications. We will (1) introduce the genetic data and polygenic scores, (2) describe data access steps, and (3) highlight a few applications of the data in recent research.

Paper Session 7: Adverse Childhood Experiences

A7.1 Child Maltreatment and Delinquency: A Multi-System Analysis of Risk and Protective Factors

Jenna E. Russo, Mississippi State University

Co-authors: Arazais D. Oliveros

Over 676,000 U.S. children were identified as victims of maltreatment in 2016 (US Department of Health & Human Services, 2018). Such experiences pose risk for negative developmental trajectories extending to adulthood, including poor emotional and physical health (Normal et al., 2012), and lower lifetime educational attainment (Hardner et al., 2017) and socioeconomic stability (Snehal et al., 2016). Additionally, though not all victims proceed to engage in delinquency, research suggests a heightened risk (e.g., Mersky et al., 2012), supported by the high percentage of youth in the juvenile justice system who report maltreatment (Goodkind et al., 2013). However, developmental trajectories vary widely and childhood adversities such as maltreatment rarely occur in isolation. An adverse family environment, for example, may worsen delinquency risk (Najman et al., 2010), whereas protective factors may disrupt the link. Although previous papers using Add Health data have identified protective factors (e.g., prosocial peers, school connectedness) in the relation between maltreatment and delinquency (e.g., Wilkinson et al., 2019), we propose that such factors do not operate in a vacuum but rather influence one another. Additionally, the role of the perpetrator, previously unaddressed, may be an important nuance given that parental bonds have been identified as protective (Craig, 2016). One parent could be the perpetrator whereas a strong relationship with the other parent may still be protective. The relation between timing of both maltreatment and the presence of various protective factors, along with risk factors, also remains unclear. Thus, using a linear mixed effects model, we aim to examine the interrelations of previously identified risk and protective factors in the relation between maltreatment and delinquency. Extending previous Add Health research, this proposed study will include the recently conducted fifth wave. Trajectories across age and time will be defined to examine the relation between maltreatment and delinquency. Given maltreatment chronicity may better indicate negative consequences than maltreatment type (Font & Berger, 2015), a categorical variable capturing frequency of child abuse or neglect will be used to assess maltreatment. Both violent and non-violent offending, mirroring prior measures of delinquency using Add Health data (e.g., Beaver et al., 2016) will be included as separate outcome variables, along with criminal justice involvement in adulthood.

Protective and risk factors will then be added to assess whether previously defined trajectories change with their inclusion. Protective factors (parent relationship quality, time with friends, school connectedness, neighborhood collective efficacy) and risk factors (school suspension,



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highlight trajectories of risk and resilience in the relation between maltreatment and delinquency, which may inform prevention and recidivism efforts. Triaging limited community resources by prioritizing supports for youth lacking protective factors, or for those who endorse risk factors, may promote more positive developmental trajectories, thus improving public safety and reducing economic burden.

A7.2 Social Services as Political Socialization: Investigating the Political Consequences of an Early Life Experience with Government

Kaye Usry, Elon University

Co-authors: Skyler Matuska

Intervention by social services should ideally be a positive moment in a child's life, improving the circumstances they grow up in. However, in practice, social services intervention has been used as a racist tool of control over poor families of color, targeting single Black women, in particular (Roberts, 2017).

Despite the often well-meaning intentions of government actors and other concerned citizens who make reports of abuse and neglect (Fong, 2020), children who become surveilled and/or removed from the custody of a parent or caregiver have early life experience with the coercive face of the state. What lessons about government are learned from such experiences? We argue that for most of these children, contact with social services is a socializing experience that causes political distrust and alienation in young adulthood. We plan to use the National Longitudinal Study of Adolescent Health (Add Health) dataset to investigate this possibility, applying coarsened exact matching to estimate the effect of early life contact with social services.

A7.3 Intergenerational Transmission of Child Maltreatment and the Role of Emotion Dysregulation: Differences in Gender and the Timing of Maltreatment

Jiwon Lee, Yonsei University

Co-authors: Eunho Jo, Ju-Hyun Song

The idea of childhood maltreatment experiences increasing the risk of future maltreating parenting (Pears & Capaldi, 2001) or "Intergenerational Transmission of Child Maltreatment (ITCM)," has been widely accepted by the public and researchers. However, the specific mechanisms involved in ITCM still remain to be clarified with further empirical evidence. Albeit limited, some studies have found evidence for the discontinuation of ITCM (Dixon et al., 2008), but few have delineated the different mechanisms for cycle breakers that induce diverging paths. One prominent candidate for cycle breakers is emotion (dys)regulation; ITCM may be attributable to emotion regulation difficulties (Ehrensaft et al., 2015), which can also function as a protective factor. In order to explain the complexity and heterogeneity of ITCM, we tested the dual roles—as a mediator and a moderator—of emotion (dys)regulation in the ITCM process. Furthermore, we examined the effects of parents' gender and the timing of maltreatment experience based on the previous evidence suggesting their importance in the cycle of violence (Herrenkohl et al. 2013). We used the data from Waves I and III from the National Longitudinal Study of Adolescent Health (Add Health). We included 924 participants (G2; Generation 2) who had a child/children (G3) at Wave III (9.2% of total target samples; 68% women). G2 reported their childhood maltreatment experiences (i.e., physical, sexual abuse, and neglect) that happened before 6th grade at Wave III. They also reported their maltreating parenting (physical abuse and neglect) towards their children. The sum scores were log-transformed. G2's emotion dysregulation in adulthood was reported with 11 items (e.g., "I easily get angry") at Wave III. The age at which G2 was first exposed to a maltreatment experience in childhood was used as a moderator. The proposed moderated moderation and moderated mediation models (Figure 1) were tested with PROCESS macro 3.5 (Hayes, 2013). The direct link between maltreatment experiences in childhood and later maltreating parenting was significant, confirming the ITCM. However, the three-way interaction of emotion dysregulation, gender, and the timing of maltreatment was significant, moderating the direct link between childhood maltreatment and maltreating parenting. In the moderated mediation model, emotion dysregulation significantly mediated the ITCM, regardless of gender or the timing of maltreatment. The results from this study confirmed the dual roles of emotion dysregulation in ITCM: as a mechanism and as a resilience factor. Women and men's maltreatment experiences and their effect on the continuity /discontinuity of child maltreatment differed as a function of the level of emotion dysregulation (Figure 2). Specifically, for women, emotion regulation buffered the effect of maltreatment experiences on their maltreating parenting, but for men, the level of maltreatment experiences was more influential than their emotion regulation. Notably, emotion dysregulation was found to be a significant mechanism for ITCM regardless of gender or the timing of maltreatment exposure. These results shed light on the role of emotion regulation as a specific mechanism explaining the individual differences in ITCM. Furthermore, the results suggest the need for taking a gendered approach to designing ITCM interventions.

A7.4 School Disciplinary Policy and the Promotion of Punitive Environments

Kyle Rakowski, Washington State University

Sociological research has identified the indirect impact of increased forms of social control within schools. Specifically, research has demonstrated how exclusionary discipline within schools can have negative consequences on student academic performance even for those students not directly punished. This research uses a modified theory of collateral consequences from Perry and Morris (2014) to examine the impact of punitive policy and exclusionary practices on student GPA as it contributes to an overall punitive environment in schools. This research is guided by the central research question: how do punitive environments (i.e. administrative disciplinary policy and rates of exclusionary discipline) within schools impact the educational outcomes of both punished and non-punished students. Using waves I, II, and III Education Files this research aims to test the following hypotheses: Hypothesis 1: The relative severity of school disciplinary policies will predict differences in overall GPA



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Exclusionary discipline is the primary independent variable of interest. Students were asked at both Waves I and II if they had ever received an out-of-school suspension or expulsion. The individual questions from Waves I and II were combined to create a dichotomous indicating whether a student had experienced an exclusionary event at either Wave I or II. Student socioeconomic status (family income and parental education) as well as age, sex/gender, and race are included in analysis for their historical significance. Student self-reported race/ethnicity is categorized as non-Hispanic white, non-Hispanic black, Hispanic, Asian/Pacific Islander, and Native American/American Indian. Analysis also includes a series of school-level variables to account for the impact of school characteristics on individual student outcomes. Models control for a school's size (small ≤ 400 , medium = 401-1000, or large $\geq 1,000$ students), type (public or private), region, and urbanicity (urban, suburban, or rural). Additionally, mean school disciplinary policy is included as a measure of overall school punitive environment. School disciplinary policy is a scale created from the school administrator data file in which school administrators rated the school's disciplinary response for a number of non-violent infractions.

Breakout Session 4

Paper Session 8: Cognitive Aging and Contributing Factors

A8.1 Childhood Risk Exposure as a Risk-Factor for Early Onset Dementia in Black-Identified Populations

Tahlia L. Bragg, Fielding Graduate University

Co-authors: April Harris-Britt, Allen Cornelius

Research that continues to explore and identify contributing factors for advanced cognitive aging is vital to reducing the impact of subjective weathering and the negative impact that poor physical health continues to have on aging in African-Americans. While research has established the impact of life stressors on children's and adolescents' physical health in adulthood, such research has failed to explicitly explore subjective weathering and novel genetic prevalence and receptor activation as significant factors on risk of early advanced cognitive aging for African-Americans later in life. The proposed study will analyze the African-American sample from archival data previously collected for the National Longitudinal Study of Adolescent to Adult Health (ADD Health). ADD Health is a government-funded project financially supported through subsidiary agencies of the National Institute of Health (NIH). Hypotheses developed for the proposed study are: 1) Ecological and developmental stress exposure during childhood, for African-Americans, will be negatively associated with quality of physical health as an adult; 2) Attributes of psychosocial maturity and subjective aging in African-Americans will moderate the relationship between childhood and adolescent stress exposure and quality of physical health in adulthood; and 3) Stress exposure during childhood and adolescence by African-Americans will mediate the quality of physical health in adulthood; therefore, adulthood physical health will predict the risk of advanced cognitive aging later in life as evidenced by the presence or absence of 5-HTTLPR gene and the level of Dopamine D4 receptor activation, which are biomarkers for cognitive decline. Results are expected to have implications providing and contributing additional critical information for designing policies, measures of therapy, and recidivism prevention programs with the purpose of advancing treatment of Early Advanced Cognitive Aging in African-Americans.

A8.2 Sexual Minority Status and Cognitive Health in Adulthood

Yiwen Wang, The University of Texas at Austin

Using the Wave IV data of National Longitudinal Study of Adolescent Health (Add Health), we compared cognitive health by sexual minority status and gender, applying linear regressions adjusting for respondent age, race, education, personal income, parental education, and family structure. The outcome variable is cognitive health, created by adding up the scores from immediate and delayed word recall tests as well as number recall tests. The key variable of interest is sexual minority status. We took advantage of the multiple waves of Add Health data and identified sexual minorities through repeated measures of multiple dimensions of sexual orientation (sexual identity, attraction, and behavior) across 4 waves. We also explored gender differences in the association between sexual minority status and cognitive health by interacting gender and minority status. Preliminary results suggest that sexual minority status is associated with men's cognitive health in adulthood but not women's.

A8.3 Exploring the Veteran-Civilian Health Crossover: A Matching Estimator Approach

Mary K. Roberts, Pennsylvania State University

People are shaped by the institutions they enter and leave through their lives, such as college, work, prison, and the military for young adults. These institutions have been shown to impact young people's health. However, the highly selective nature of these institutions proves difficult for estimating causal effects. I used The National Longitudinal Study of Adolescent to Adult Health (Add Health) in combination with propensity score matching to examine the effect of military service on future physical and mental health. I found that military service provides a buffer against physical health deterioration for members between the age of 24- and 32-years old, this begins to diminish when they reach the ages of 32-40 years old. At the older ages veterans exhibit both mental and physical health declines compared to their civilian counterparts, lending support to the theory of a veteran-civilian health crossover.

A8.4 The Empirical Exploration of the Pathways between Adverse Childhood Experiences (ACEs) and Adoption of Health-risk Behaviors Based on an SEM approach

Bing Han, Purdue University

Health-risk behaviors are widely acknowledged as one of the most important predictors of disease, disability, social problems, and early death. Understanding the mechanisms of how health-risk factors are influenced by childhood experiences is helpful for health intervention at an early stage (e.g., promoting state-level protective policies, and increasing family-level and school-level awareness). Adverse Childhood Experiences (ACEs) are broadly defined as "potentially traumatic events that occur in childhood (before 18 years old)" (Felitti et al., 1998), which usually include children experiencing violence, abuse, or neglect, having a family member attempt or die by suicide, and growing up in a household with substance use problems, mental health problems, or instability caused by incarceration or parental separation (CDC, 2021). The CDC-Kaiser Permanente study of ACEs leads to a trend in studying the impact of ACEs. The pioneering ACE pyramid proposed by the team explains the mechanism by



Abstracts

which ACEs should influence health and well-being from the perspective of the lifespan. This study aims to empirically examine how ACEs influence the adoption of health-risk behaviors through social, emotional, and cognitive impairment based on a Structural Equation Modeling (SEM) approach. The SEM approach demonstrates diverse advantages. This study adopts a latent class analysis (LCA) method to measure childhood adversity. LCA gets rid of the usual criticism on a summated scale for violating the assumption. A summated ACE scale assumes that all included items should be equally weighted and there is only one dimension in the variable. This approach often ignores the variation and effects of different types of ACEs, including household dysfunction, abuse, and neglect. While incorporating the nuance of different types of childhood adversity, LCA reduces data redundancy and only keeps classes that make a difference. ACEs are usually correlated, and LCA could also account for the covariances between items. Finally, the SEM structure helps to determine the pathways through which different types of ACEs influence different health-risk behaviors. Based on the items used in the original ACEs study and Moss et al.'s (2020) reconstruction of ACE measurement in Add Health, this study draws multiple items that fall into 9 facets: emotional abuse, physical abuse, sexual abuse, household alcoholism, suicide in the household, parental separation, divorce or death, incarceration in the household, emotional neglect, and physical neglect. Health-risk behaviors include risky sexual behaviors, heavy alcohol use, smoking, substance problems, and marijuana use. The potential pathways include mental health problems and a lack of social support, which are measured by different scales. A total of 11,459 cases in Add Health are analyzed. Findings suggest significant effects of ACEs on health-risk factors even after controlling for demographic characteristics and confounding variables. The mediating roles of mental health and social support are also tested.

Breakout Session 5

Methodology Session 5: Add Health Biological Data

Add Health Wave V Biological Data and Vital Events

Eric A. Whitsel, Ph.D., Professor of Epidemiology at Gillings School of Global Public Health, Adjunct Professor of Medicine at School of Medicine, University of North Carolina at Chapel Hill

This session will cover three areas:

- (1) methods used to collect Wave V biological data and specimens, including anthropometrics, cardiovascular measures, medications, and blood;
- (2) their monitoring and quality control; and
- (3) surveillance of deaths since cohort inception, including their identification, review, classification, and adjudication.

Paper Session 9: Physical Health and Racial/Ethnic Disparities

A9.1 The Relationship between Childhood ADHD Symptoms and the Effect of Vegetarian Status on Young Adult ADHD Diagnosis

Fadhil Jamil, California University of Science and Medicine

Co-authors: Diana Martinez, Rachita Pandya, Zohray Talib, Hani Atamna, Mohsin Yakub, Sherif Hassan, Shabana Masood

Introduction: Attention deficit hyperactivity disorder (ADHD) is a neurodevelopmental disorder diagnosed during childhood and continuing into adulthood. ADHD is subtyped into Inattention (IN) and Hyperactivity/Impulsivity (HYP/IM). As research suggests a vegetarian diet reduces ADHD symptoms in children, this study assesses ADHD subtypes and symptom severity in children and adolescents (5-12 years) and the effect of vegetarian status on ADHD diagnosis in young adults (18-25 years). Methods: There were n=1607 young adult nonvegetarians with ADHD and n=99 vegetarians with ADHD. The study design included retrospective recall of childhood and adolescence ADHD symptoms and prospective assessment of vegetarian diet and ADHD diagnosis during young adulthood using Wave III data from The National Longitudinal Study of Adolescent Health. Crosstabulation measured symptom severity (never or rarely, sometimes, often, very often) and Independent T-tests assessed mean group differences between subtypes, vegetarian status, and ADHD diagnosis using SPSS version 25. Results: Young adult nonvegetarians had increased ADHD diagnosis in both subtypes (IN: n=851; M=23.64; SD 9.18; HYP/IM: n=756; M=23.63; SD=8.4) compared to vegetarians (IN: n=45; M=1.4; SD=1.32; HYP/IM: n=54; M=1.5; M=1.36). Group differences were significant (IN: T [66]13.51; p<.001 and HYP/IM: T [62]9.79; P<.001). Childhood ADHD symptoms occurring "sometimes" for nonvegetarians (IN: n=270; HYP/IM n=205) and vegetarians (IN: n=25; HYP/IM n=16) were most prevalent. Conclusion: Compared to vegetarians, non-vegetarians with either childhood ADHD subtype had increased ADHD diagnosis as adults. Both groups had moderate childhood symptom severity. Identifying childhood ADHD subtype and severity and the role of diet in predicting young adulthood ADHD diagnosis is a novel approach.

A9.2 Exploring Differences in Hypertension among Young Adults, by Race and Ethnicity, when Adjusting for Acculturation

Dani Montoya, Virginia Commonwealth University

Co-authors: Anika Hines

Latinos/Hispanics are the fastest growing, and the youngest (median age of 30) ethnic minority in the United States. Like others living in the US, cardiovascular disease (CVD) is one of the top causes of mortality for all Latinos. Previous studies have indicated that despite having a high prevalence of CVD comorbidities like diabetes and high cholesterol, when compared to Non-Hispanic Whites (NHWs) and Non-Hispanic Blacks (NHBs), Hispanics have a lower prevalence of hypertension, CVD, and CVD related deaths. This phenomenon is often called the Latino Paradox, which describes the paradoxical occurrence of Latinos having high risks for disease and a low mortality rate compared to NHBs and NHWs. Existing literature suggests that nativity, immigration, language, generational status influences variation in CVD and CVD-related risk factors between Hispanics and other groups. More recent studies have evaluated within-group differences in CVD risk factors, theorizing that acculturation level (how closely your identity and behavior matches the dominant culture) may explain some differences in CVD risk factors among Hispanics. To address both the gap in the literature for between-group and within-group racial differences in CVD risk factors among Hispanics and the possible contribution of acculturation, this study examined the odds of having self-reported hypertension among young adults (aged 24-32) from the Add Health Wave IV survey. Frequencies, cross-tabulations, and logistic regression of acculturation level (high and low) and racial/ethnic identity (NH White, NH Black, Other Non-Hispanics, White Hispanics, and Non-White Hispanics) were used to analyze the data.



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Abstracts

In Model 1, which modeled the unadjusted association between race/ethnicity and self-reported hypertension, results indicated that White Hispanics had a 0.475 [OR=0.475; 95% CI=0.233,0.968] times lower odds of having self-reported hypertension compared to Non-White Hispanics. Odds for all other racial ethnic classifications were found to be not statistically significant. In Model 2, which adjusted for demographics, results indicated that White Hispanics had 0.459 times lower odds of having self-reported hypertension [OR=0.459; 95% CI=0.225, 0.938], and that age was weakly associated [OR=1.062; 95% CI= 1.011, 1.116]. Results from model 3, which added health behavior and health status factors, indicated that those who had self-reported diabetes had 3.424 times higher odds [OR=3.424; 95% CI= 2.072, 5.659] of having self-reported hypertension compared to those who did not. The regression also indicated that age was weakly associated with self-reported hypertension [OR=1.073; 95% CI= 1.003, 1.149]. In Model 4 which added acculturation, results indicated that acculturation was statistically significant but did not affect the association between race/ethnicity categories with hypertension. The addition of interaction variables of race/ethnicity and acculturation indicated some potential association with the outcome of interest; however, further research is needed to understand how acculturation affects intersectional identities such as combined race/ethnicity as well as sex/gender. Further studies would benefit from using Wave V to explore both social and community-level factors and their role in the association of race/ethnicity and self-reported hypertension.

A9.3 Associations Between Resilience and Physical Health across Intersections of Race and Gender

Tyler Bruefach, Florida State University

Objectives

The current study examines race and gender differences in the associations between psychological resilience and physical health across early adulthood. Scholarship on resilience typically examines how people recognize adverse (unfavorable) circumstances, perceive actions that could be taken, and activate resources to resolve them within structured social conditions. A growing body of research conceptualizes psychological resilience (hereafter “resilience”) as a measure of one’s capacity for handling adversity in ways that foster health and well-being. Though this literature finds that resilience is a robust predictor of physical health, most supportive evidence is concentrated among older adults. Previous research also suggests that sources of discrimination (racism and sexism) and racialized/gendered health behaviors intersect in ways that condition the health-benefits associated with psychosocial resources. I extend current research on psychological resilience by examining how it shapes young adults’ physical health and how these relationships might vary across racial and gender groups.

Methods

Analyses draw on individual-level and biomarker data from waves 1, 4, and 5 of Add Health to examine longitudinal associations between resilience and physical health among young adults. Due to sample size limitations, I restrict analyses to respondents identifying as non-Hispanic White (“White”), non-Hispanic Black (“Black”), and Hispanic/Latinx. Resilience is measured using the Add Health Resilience Scale (AHRs), a retrospectively constructed measure based on respondents’ responses to psychological and personality items at wave 4. I use respondents’ sex assigned at birth (male; female) to gauge gendered processes. Ordinary least-squares (OLS) regression is used to model two measures of physical health: self-rated health and allostatic load. To estimate potential differences in the relationships between resilience and physical health at Wave 5, I examine marginal effects based on 3-way interactions between race, gender, and resilience. Control measures include wave 4 physical health and wave 5 measures of age, educational attainment, income, paid work, and marital status.

Findings

Analyses show that resilience is associated with physical health across early adulthood and that these relationships vary across health measures, race, and gender. Resilience is associated with self-rated health among White respondents and Hispanic/Latinx women, but not among Black respondents and Hispanic/Latinx men. Resilience was associated with allostatic load for fewer respondents; it was only associated with lower allostatic load for White women, though marginally significant results ($p = 0.075$) imply that Black men could also benefit. Future research can advance current understanding of resilience by employing intersectional methodologies and examining the underlying processes that shape the health-benefits associated with resilience.

A9.4 Investigating Moderation in the Prospective Relationship of Marijuana Use to Subsequent Illicit Substance Use: Evidence from Add Health

Radhika Prasad, University of Albany, SUNY and University of Utah

Co-authors: Ming Wen, Daniel E. Adkins

Introduction

The Gateway Hypothesis of substance progression posits that use of socially normalized substances (e.g., marijuana) increases the probability of subsequent progression to more dangerous illicit substances. While previous research has yielded inconsistent support for the hypothesis, few studies have examined the process prospectively over multiple life course stages or considered potential moderation of the process by age of marijuana use initiation, gender, or race/ethnicity.

Methods

Data from five waves of the National Longitudinal Study of Adolescent to Adult (N=20,774), spanning ages 12-42, were used to assess the effect of prospectively assessed marijuana use on illicit substance use in mature adulthood (i.e., the gateway effect), conditional on sociodemographic controls. Moderation of the gateway effect by age of marijuana use initiation, gender, and race/ethnicity were also examined. We performed logistic regression to examine our hypotheses and multiple imputation was used to address a modest amount of missing data.

Results

Marijuana use was strongly associated with use of more dangerous illicit substances in mature adulthood (OR=4.704, $p < 0.001$), conditional on sociodemographic controls. Individuals who initiated marijuana in early adulthood were less likely to progress to illicit substance use in mature adulthood, compared to those who initiated marijuana in adolescence (OR=0.633, $p=0.015$). No evidence was found of gender or racial/ethnic moderation of the gateway effect.

Discussion

These findings offer general support for a gateway effect of marijuana use on more dangerous illicit substance use. Results also indicated that initiating marijuana use in early adulthood entails less risk of progressing to more dangerous illicit substance use than initiating marijuana use during adolescence.



Paper Session 10: Sexual Orientation and Gender Identity

A10.1 Sexual Orientation, Everyday Discrimination, and the Mediating Role of Gender Expression Among Women in the National Longitudinal Study of Adolescent to Adult Health

Carolyn T. Halpern, Ph.D., Add Health Deputy Director (2004-2021), Professor & Chair, Department of Maternal and Child Health, Carolina Population Center, University of North Carolina at Chapel Hill
Co-authors: *Shoshana Goldberg, Kerith Conron*

Scholars theorize that sexual and gender minority (SGM) people are at increased risk of mistreatment due to visible expressions of sexuality and gender – particularly gender nonconformity in a person’s appearance or mannerisms. However, most research to date has been limited to samples of SGM people. To test the hypothesis that gender expression is a putative cause of prejudice towards SGM people, studies must include both SGM and cisgender heterosexual people and examine the mediating role of gender expression in relation to identity and adverse treatment. This study uses Add Health Wave 5 data to test the hypothesis that adult gender expression partially mediates the association between sexual orientation and Everyday Discrimination (ED) in a diverse sample of adults (N=6,631) whose sex assigned at birth was female (hereafter women given that only a handful of participants were transgender). Findings include that most women experience ED and attribute these experiences to a range of characteristics, including their sex and race. However, sexual minority women reported more experiences of ED, were more likely to be non-conforming in their gender expression and were more likely to attribute ED to their gender identity and expression and sexual orientation than completely heterosexual women. Findings from mediation analyses, including analyses stratified by racial majority and minority group membership, will be presented and discussed.

A10.2 Sexual Orientation, Gender Expression, and Socioeconomic Status in the National Longitudinal Study of Adolescent to Adult Health

Stephanie M. Hernandez, University of North Carolina at Chapel Hill
Co-authors: *Carolyn T. Halpern, Kerith Conron*

Socioeconomic status (SES) is a fundamental contributor to health and disease across the life course. SES varies by sexual orientation and other demographic characteristics. A key characteristic that may influence SES is gender expression and specifically gender nonconformity. While SES has been examined across several demographic characteristics including race, ethnicity, and sexual orientation, gender expression and sexual orientation have not, to our knowledge, been jointly examined in relation to socioeconomic status in the United States. Therefore, the aim of the current study was to examine associations between sexual orientation and gender expression (SOGE) and socioeconomic status (SES) separately by sex assigned at birth. We hypothesized that gender nonconforming expression and sexual minority status would be negatively associated with multiple indicators of SES among women and men. Our study utilized restricted-use data from Wave V of the National Longitudinal Study of Adolescent to Adult Health (Add Health). The sample consisted of 11,242 respondents, including 6,401 women and 4,841 men. SES measures included educational attainment, employment status, personal income, poverty to income needs ratio, household debt, falling behind on paying bills, and experiencing foreclosure, eviction, or repossession. Gender expression and sexual orientation were combined into one variable, SOGE status. Respondents were categorized into one of four SOGE groups, (1) gender conforming (GC) heterosexuals, (2) gender nonconforming (GNC) heterosexuals, (3) GC sexual minorities, and (4) GNC sexual minorities. Other covariates included race and ethnicity, age, parental education, receipt of public assistance during childhood, urbanicity, and census region. Overall, the majority (89%) of the sample was categorized as gender conforming (GC) and (completely) heterosexual. Results suggest significant variation in SES across SOGE status and sex. Gender conformity and sexual minority status were associated with lower SES among women, and to a lesser extent among men. In addition, gender nonconformity, regardless of sexuality, was associated with a higher likelihood of having an income below the federal poverty line among men. The patterns identified here have implications for understanding the relationship between sexual orientation, gender expression, socioeconomic status, and health, particularly among gender conforming sexual minorities.

A10.3 Theoretical and Methodological Advances in Scaling Gendered Behavior: A Machine Learning Approach for Creating a Wave 5 Gendered Behavior Measure

Trenton D. Mize, Purdue University
Co-author: *Bing Han*

Gender has profound effects on people’s lives and health. But gender is a multi-faceted concept, consisting of, e.g., gender identities (e.g. the categories of men and women), gendered behavior (e.g. masculine and feminine acts), and other aspects. Cleveland, Udry, and Chantala (2001) use the “gender diagnosticity” approach of Lippa and Connelly (1990) to develop a measure of gendered behavior in Wave 2 of Add Health. This measure of gendered behavior (AKA gender-typicality) has been profitably used by researchers to study a variety of topics including sexual-minorities’ selection into gender-typed occupations (Ueno & Peña-Talamantes, 2013), gender atypicality and educational achievement (Yavorsky & Buchmann, 2019), and gender and sexual orientation inequalities in the labor market (Mize, 2017). This approach to modeling gendered behavior has some key advantages. First, it is a sample-specific measure which makes it sensitive to time and place rather than being a researcher-defined understanding of gendered behavior at a given time. Second, it is a measure of gendered behavior across domains—i.e. it is a broad-based measure of gendered behavior rather than one tapping only a single area (e.g. gendered behavior in the workplace). Our goals are threefold. First, we add a theoretical argument based in the sociological “doing gender” literature to justify this specific approach to measuring gendered behavior. Second, we use machine learning techniques to create more precise measures of gendered behavior than have previously been available in Add Health. Third, we tailor the approach to Waves 4 and 5—updating a measure that was developed only in Wave 2 when respondents were much younger. Our updated approach uses the least absolute shrinkage and selection operator (lasso) to select the best set of items that identify someone’s gender category based on 57 expressed attitudes, beliefs, and behaviors available in the data that theoretically indicate gendered behavior. Lasso is a machine-learning method that simultaneously attempts to maximize the predictive power of the model while including a penalty for complexity to prevent over-fitting. This method focuses on maximizing overall model prediction instead of identifying unique effects of each predictor. Our Wave 5 receiver operating characteristic (ROC-AUC) score is 83.97, which indicates that 83.97% of the time our gendered behavior scale correctly predicts the gender of randomly selected respondents. Our ROC-AUC is similar to—but slightly higher—than the Wave 2 version of Cleveland et al. (2001). We illustrate the utility of the new Wave 5 gendered behavior measure by examining health behavior



Abstracts

inequalities at the intersection of gender identity and gendered behavior. Results illustrate both important main effects of gendered behavior—e.g. more masculine behavior is associated with more health-risky behaviors for both genders—and important moderating effects where the effect of gendered behavior differs in important ways for men and women.

Breakout Session 6

Methodology Session 6: Analyzing Add Health Data

Best Practices in Finding and Using Add Health Data

Robert A. Hummer, University of North Carolina at Chapel Hill

Add Health is a nationally-representative longitudinal study with special survey design features. This session will discuss how users can account for those features, including clustering, stratification, and unequal probability of selection. It will focus on how to choose correct sampling weights and avoid common errors. It will also give specific examples of how to apply weights to run descriptive statistics, population-average models, subpopulation analysis, and multilevel models.

Paper Session 11: Depression and Suicide

A11.1 The Effect of Peers' Genetic Predisposition to Depression on Mental Health

Yeongmi Jeong, University of Georgia

The goal of this research is to examine whether peers' genetic predisposition for depression affects one's own mental health in the short- and long-run. Depression is a common mental disorder in the US (NIMH, 2020) and there has been growing concern about adolescent depression. Adolescents with depression are about three times more likely to be depressed in adulthood compared to non-depressed adolescents (Johnson et al., 2018). Therefore, understanding the factors that affect adolescent depression is key for preventing and treating depression. Since peers have particularly strong impacts on each other during adolescence (Brown and Larson, 2009), peers' mental health may be an important determinant of own mental health. Using linear regression models, I examine how peers' genetic predisposition for depression affects one's own mental health during adolescence and later in adulthood. I define same-gender grademates' as peers and exploit genetic variation in peers' genetic propensity for depression within schools across grades. For the analysis, I use the Add Health core files and genetic file. Core files include detailed individual characteristics such as age, gender, and mental health questionnaires that allow me to construct the Center for Epidemiological Studies Depression Scale (CES-D-10). The CES-D-10 score is used to construct a binary measure of own depression, which is my main outcome of interest. The files also include detailed school, family, and parental information, which are used as controls in the analysis. The genetic file includes the polygenic risk score for major depressive disorder (hereafter, MDD score), a composite measure of genetic markers that are correlated with MDD. A higher MDD score implies a higher genetic risk for depression. I construct same-gender grademates' average MDD score, which is the main explanatory variable of interest. I find that an increase in same-gender grademates' average MDD score is significantly associated with an increase in the probability of being depressed in adulthood for both males and females, with weaker effects on adolescent own depression. I plan to explore the mechanisms underlying the relationship, including substance use, labor market choices, and educational performance and attainment. Findings from this research contribute to the literature in several ways. First, this study adds to the literature on the impact of peers on own mental health by considering peers' genetic predisposition to depression, avoiding many of the empirical challenges associated with identifying peer effects (i.e., the reflection problem). Second, the results have implications for whether interventions to curb adolescent depression should be individual- or group-based. Third, this work contributes to the growing literature on social-genetic effects in the context of mental health.

A11.2 Adverse Childhood Experiences, Sexual Victimization, and Suicidal Behavior: A Longitudinal Path Analysis Spanning 22 Years

Martie Thompson, Appalachian State University

Co-authors: J.B. Kingree

Purpose

Suicide is an urgent public health problem. The purpose of this study was to determine if adverse childhood experiences (ACEs) increased the risk for seriously considering suicide and making a suicide attempt approximately 22 years later, and if sexual victimization in adulthood mediated these associations.

Methods

Data from a nationally representative sample of 10,914 participants in the National Longitudinal Study of Adolescent to Adult Health were used to test prospective direct associations of ACEs (including physical, sexual, and emotional abuse, neglect, family history of suicidal behavior, and parental death, alcoholism and incarceration) with suicide ideation and attempts and their indirect effects through sexual victimization in adulthood.

Results

All but one ACE significantly predicted increased odds of making a suicide attempt. Physical, sexual, and emotional abuse as well as family history of suicidal behavior and parental incarceration predicted seriously considering suicide. All forms of childhood abuse and family history of suicidal behavior predicted increased odds of sexual victimization. In multivariate longitudinal models controlling for age, race, and gender, the odds of seriously considering suicide and making a suicide attempt increased as the number of ACEs increased. Experiencing two or more ACEs also was associated with an increased likelihood of experiencing sexual victimization in adulthood, which in turn mediated the effects of ACEs on suicide ideation but not suicide attempts.

Conclusions

Findings indicate that reducing ACEs is an important strategy for suicide prevention not only due to ACEs' direct association with suicide ideation and attempts, but also due to their indirect association via subsequent sexual victimization.



Abstracts

A11.3 A Longitudinal Analysis of the Impact of Childhood Trauma on Suicide Ideation Compared Across Gender, Race/Ethnicity, and Sexual Orientation

Linda Quinn, Cleveland State University

Co-authors: Jinhee Yun, Christopher A. Mallett, Miyuki Fukushima Tedor

Using Waves I through V of the National Longitudinal Study of Adolescent to Adult Health (n=7,295), this study examines the longitudinal impact of trauma on suicide ideation. This study focuses on the high-risk and vulnerable population of LGBTQ+ youth and race/ethnic minorities. We found a greater risk of suicide ideation among youth identified as LGBTQ+, non-Hispanic Blacks, and males compared to their respective reference groups. As expected, childhood trauma and family and friends' suicide attempt significantly increased the risk of suicide ideation. Additionally, the greater risk of suicide ideation among LGBTQ+ youth and males, compared to straight youth and females, respectively, is found only in later waves when the respondents are in their adult ages.

Paper Session 12: Fertility and Reproductive Health

A12.1 Fertility and Cultural Transmission: The Role of Peer Effect

Daniel Santos Torres, Universidad de La Laguna (Spain)

Co-authors: Carlos Bethencourt

This paper analyzes the impact of cultural transmission on fertility choices for a cohort of American married women. We evaluate at which extent the socialization process in adolescence has any impact in fertility choices in adulthood. We consider both the extensive and the intensive margin of fertility. Vertical cultural transmission is measured with the number of siblings reported by women, and horizontal cultural transmission with the average number of siblings reported by their schoolmates when teenagers. We find that there is no cultural transmission in the motherhood decision: neither variable siblings nor variable peers' sibling are significant. However, we find a strong effect of cultural transmission (both vertical and horizontal) in the intensive margin: women with a big number of siblings or with a big number of peers' siblings tend to have more children. Moreover, we also find that cultural transmission is stronger for women with: better relationship with their mother in high school years, better closeness with their high school peers, and parents that have better communication with friends' parents.

A12.2 Adolescent Exposure to Structural Sexism and Early Transitions to Motherhood

Jessica Su, University of North Carolina, Cornell University

Co-authors: Kelly Musick

Although teen fertility has been declining for over a decade, age at birth in the United States remains substantially younger than in other wealthy countries. Early childbearing curtails educational and employment trajectories for women and is associated with poorer health and well-being. We build on the structural sexism and health perspective to investigate how exposure to gender inequality in the critical developmental stage of adolescence shapes early entry into motherhood. We posit that institutions and interactions that reproduce unequal gender systems increase the likelihood of early childbearing by limiting young women's economic prospects and independence, reproductive health resources, and power in romantic relationships. We use Add Health to leverage variation in gender inequality across multiple levels of influence, including states, counties, schools, and families. We draw on data from the WI contextual database, WI in-school survey, Waves I, IV, and V in-home surveys, and W1 parent survey. Macro-level structural sexism is an index comprised of several indicators of the county-level economic, political, and religious environment, as well as state-level family planning policies from the Wave I contextual data (see e.g., Homan 2019). These measures therefore capture the macro ecological context that respondents experienced during adolescence. Meso-level structural sexism is an index comprised of attitudes and characteristics of school peers and peers' parents from the Wave I in-school survey. Students were asked to rate (1) their chances for graduating from college, (2) their chances for having a middle-class income by age 30, and (3) agreement with the statement that teachers treat romantic relationships. We use Add Health to leverage variation in gender inequality across multiple levels of influence, including states, counties, schools, and families. We draw on data from the WI contextual database, WI in-school survey, Waves I, IV, and V in-home surveys, and W1 parent survey. Macro-level structural sexism is an index comprised of several indicators of the county-level economic, political, and religious environment, as well as state-level family planning policies from the Wave I contextual data (see e.g., Homan 2019). These measures therefore capture the macro ecological context that respondents experienced during adolescence. Meso-level structural sexism is an index comprised of attitudes and characteristics of school peers and peers' parents from the Wave I in-school survey. Students were asked to rate (1) their chances for graduating from college, (2) their chances for having a middle-class income by age 30, and (3) agreement with the statement that teachers treat students fairly at their school. Students were also asked about whether their residential mother and/or father (4) attained a college education and (5) worked for pay. Within each school, we calculated male/female ratios for each of these items, such that a value over 1 indicates male advantage. Micro-level structural sexism incorporates measures of parent's gendered expectations and religious conservatism at Wave I, using data from the Wave I Parent survey. Our dependent variable indicates whether the respondent gave birth between the ages of 15-21, the first quartile for age at first birth in the Add Health sample. Date of first birth was collected in the live birth roster at the Wave IV follow-up. We used the Wave V report for respondents who were missing data at Wave IV. We estimate the relationship between multiple levels of structural sexism and the odds of early childbearing using discrete-time logistic regression event history models with random effects. Our data are structured in person-year format; respondents contribute an observation for each year they are at risk of first birth from age 15-21. We find that economic, political, religious, and legal dimensions of gender inequality at the outermost level—the macrosystem—are strongly associated with transitions to first birth prior to age 22. If women are exposed to the first quartile of macro structural sexism, 20% are predicted to have a birth by age 21, compared to 23% at the median level, and 28% at the third quartile. Our study sheds new light on the structural forces that shape young women's opportunities and constraints.

