

11.8.2020

**University of Memphis School of Public Health
COVID-19 RELATED RESEARCH**

Latrice Pichon:

Funding Source: NIH/NIMHD/NHLBI

Research Project: Community Engagement Alliance (CEAL) against COVID-19 Disparities

Project Goal: Focus on COVID-19 awareness and education research among African Americans and Hispanics/Latinos accounting for over half of all reported cases in the United States; Promote and facilitate the inclusion and participation of these groups in vaccine and therapeutic clinical trials to prevent and treat the disease.

Principal Investigator (sub-award): Latrice C. Pichon, PhD, MPH, Fawaz Mzayek, PhD (Parent Award: PI Juarez, Paul)

Aram Dobalian:

CORNET grant

“The Impact of the COVID-19 Pandemic on Racial, Gender, and Socioeconomic Disparities in Access to Care and Health Outcomes Among Patients with Ambulatory Care Sensitive Conditions”

2020 University of Tennessee Health Science Center (UTHSC)/University of Memphis (UofM) SARS-CoV-2/COVID-19 Research CORNET grant

PIs: Aram Dobalian, PHD, JD, MPH, Satya Surbhi, PhD, MS, B.Pharm

Co-I: **Courtnee Melton-Fant, PhD, Paige Powell, PhD, MHA**, James E. Bailey, MD, MPH

This quasi-experimental study is (1) examining the impact of the COVID-19 pandemic on racial, ethnic, gender, and socioeconomic disparities in access to care and health outcomes, and (2) evaluating the effect of reductions in elective surgeries and procedures on cardiovascular disease (CVD) events and mortality among adult patients with ambulatory care sensitive conditions residing in the Mid-South region of the US. Additionally, we are examining whether CVD outcomes, CVD-related mortality, and overall mortality varies based on health systems factors for these vulnerable patient populations.

SangNam Ahn:

“Changes in Healthcare Utilization, Spending, and Perceived Health during COVID–19: A Longitudinal Study from Singapore”

Dr. SangNam Ahn works on a manuscript project to examine the association of the COVID-19 pandemic with healthcare utilization, out-of-pocket medical costs, and perceived health status in Singapore. Using the individual-level monthly panel data (2018-2020), Dr. Ahn and his colleagues (Drs. Seonghoon Kim and Kanghyock Koh) found that COVID-19 was associated with a decrease in doctor visits by 9.3 percentage points but an increase in depressive symptoms by 2.8 percentage points. Dr. Ahn concludes that it is imperative to monitor COVID–19’s long-term health effects among non-COVID–19 patients since study findings indicated delayed healthcare and worsened mental health related to the outbreak. You can read the working paper at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3669090.

Chunrong Jia (unfunded projects)

Two COVID-19 related projects:

1. Impact of COVID-19 “stay-at-home” policy on air quality
Collaborators: Debra Bartelli (UofM SPH) and Larry Smith (Shelby County Health Department)
Status: completed
Publication: Jia, C.; Fu, X.; Bartelli, D.; Smith, L. Insignificant Impact of the “Stay-At-Home” Order on Ambient Air Quality in the Memphis Metropolitan Area, U.S.A. *Atmosphere* **2020**, *11*, 630.
Media: <https://www.wknofm.org/post/streets-cleared-air-did-not>
2. Indoor air pollution and interventions in clinics during the pandemic
Collaborator: Annie Zhao (White Station High School)
Status: ongoing

Xinhua Yu:

COVID-19 Antibody test in Shelby County. Collaborating with Dr. Manoj Jain and working with Christ Community Health Centers, funded by the City of Memphis.

This study will conduct a targeted seroprevalence survey of minority populations throughout Shelby County to estimate the prevalence of COVID-19 and to understand health disparities during the COVID-19 pandemic. Findings will provide insight into community SARS-CoV-2 infection rates and will help design optimal intervention strategies and vaccine distributions in vulnerable populations.

Publications:

1. **Yu X.** Health service inequalities during the COVID-19 pandemic among elderly people living in large urban and non-urban areas in Florida, US. *Sage Open Medicine* (in press). 2020
2. **Yu X.** Modelling the return of the Modeling Return of the Epidemic: Impact of Population Structure, Asymptomatic Infection, Case Importation and Personal Contacts. *Travel Med Infect Dis.* 2020 Sep-Oct;37:101858. doi: 10.1016/j.tmaid.2020.101858. Epub 2020 Aug 27.
3. **Yu X.** Impact of mitigating interventions and temperature on the instantaneous reproduction number in the COVID-19 pandemic among 30 US metropolitan areas. *One Health.* 2020 Dec;10:100160. doi: 10.1016/j.onehlt.2020.100160. Epub 2020 Aug 22.
4. **Yu X.** Risk Interactions of Coronavirus Infection across Age Groups After the Peak of COVID-19 Epidemic. *Int. J. Environ. Res. Public Health* 2020, *17*
5. **Yu X,** Duan J, Jiang Y, Zhang H. Distinctive trajectories of COVID-19 epidemic by age and gender: a retrospective modeling of the epidemic in South Korea [published online ahead of print, 2020 Jul 2]. *Int J Infect Dis.* 2020;S1201-9712(20)30536-1. doi:10.1016/j.ijid.2020.06.101
6. **Yu X.** Assessing Epidemic Trend in Real Time with a Simple Ratio Plot [published online ahead of print, 2020 Jun 29]. *Am J Epidemiol.* 2020;kwaa123. doi:10.1093/aje/kwaa123
7. Nekhlyudov L, Duijts S, Hudson SV, Jones JM, Keogh J, Love B, Lustberg M, Smith KC, Tevaarwerk A, **Yu X,** Feuerstein M. Addressing the needs of cancer survivors during the COVID-19 pandemic [published online ahead of print, 2020 Apr 25]. *J Cancer Surviv.* 2020;1-6. doi:10.1007/s11764-020-00884-w

Marian Levy and Vikki Nolan

Reducing Transmission of COVID-19: Measuring Mask Use Compliance in Shelby County

Funded by the Shelby County Health Department and the City of Memphis

This research is being conducted by the University of Memphis School of Public Health to assist the Mayors COVID-19 Joint Task Force in their response to COVID-19. The study used two methods of direct observation to examine pre-post trends of compliance with Memphis' city-wide Facial Mask Ordinance and the Shelby County Health Directive enacted on June 25 and July 3, 2020, respectively.

The methods included 1) direct observation of mask usage in 20 large retail settings and 2) review of video tapes captured by city cameras of outdoor public areas (Highland, Madison, and Beale streets). Four MPH students serve as observers and collect data on a monthly basis.

Drs. Levy and Nolan also collaborate in a national study of mask adherence and distancing: **Systematic Observation of Masking Adherence and Distancing (SOMAD), funded in part by NHLBI # R01HL145145** (Deborah Cohen, PI)

Yu Jiang

Clinical, immunological and viral determinants of COVID-19 disease severity in adults and children

Sponsor: 2020 University of Tennessee Health Science Center (UTHSC)/University of Memphis (UofM) SARS-CoV-2/COVID-19 Research CORNET Grant

PIs: Heather Smallwood, PhD (UTHSC); Yu Jiang, PhD (UofM)

Co-Is: Nick Hysmith, MD (UTHSC); Colleen Jonsson, PhD (UTHSC)

This study aims to characterize key epidemiological, clinical, immunologic, and virologic characteristics of COVID-19 in both children and adults in Memphis, Tennessee. Understanding of viral and host interactions will advance practical applications such as drug and vaccine development. Preliminary work from this project has led to the development and submission of an R01 study proposal.

Yong Yang

The Change of health behaviors and mental health during the COVID-19 pandemic

Sponsor: University of Memphis Community of Research Scholars (CoRS) Program

PI: Yong Yang

Co-Is: Ken Ward, Aram Dobalian James Murphy, Yu Jiang

The COVID-19 outbreak is changing our environment and behaviors. A longitudinal survey using an online crowdsourcing platform began in April 2020. We are interested in outcomes such as

stress, loneliness, depression, anxiety, physical activity, diet, tobacco use, alcohol use, marijuana use, and vaccinations.