**ADVANCED DATA ANALYSIS**

**PROJECT**

**CONCEPT PROPOSAL INSTRUCTIONS**

**TITLE OF PROJECT: Relationship between infectious disease (HIV, Hepatitis, TB, and STDs) and injection drug use, among incarcerated adults**

**STUDENT(S):** Abbie Teurbe-Tolon

**BACKGROUND**

The rates of several infectious diseases are far higher among incarcerated individuals than among the general population (Cloud, 2014). Though the negative health outcomes among incarcerated persons are numerous, I will specifically examine infectious diseases. Namely, this paper will focus on: HIV/AIDs, which is 2 to 7 times more prevalent; Hepatitis, which is 8 to 21 times more prevalent; Tuberculosis (TB), which is 4 times as prevalent; and sexually transmitted diseases (STDs), which are 3 to 6 times as prevalent, among incarcerated individuals (Cloud, 2014; Wiehe, Rosenman, Aalsma, Scanlon, & Fortenberry, 2015).

One key factor that can influence the spread of these diseases, includes, but is not limited to, sharing and/or using contaminated needles (“Correctional Facilities | TB in Specific Populations | TB | CDC,” n.d.; “Hepatitis C Questions and Answers for Health Professionals | CDC,” n.d.). A study done by the World Health Organization (1995) found that between 60-90% of injection drug users have been to prison at some point, and many find ways to continue injection drug use inside prison (*Multi-city study on drug injecting and risk of HIV infection: A report prepared on behalf of the WHO International Collaborative Group. Genva: World Health Organization*, 1995). These uses of needles increase one’s risk of developing HIV and/or Hep C. The development of those diseases, in turn, can increase one’s likelihood of developing TB. Moreover, many prisoners engage in sexual activity (whether consensual or not), which further increases likelihood of spreading HIV and Hep C (Health Organization Regional Office for Europe, 2014).

**OBJECTIVES**

***The objectives of this project are to:***

*1. Determine whether having HIV influences the odds of being an injection drug user*

*2. Determine whether having Hepatitis influences the odds of being an injection drug user*

*3. Determine whether having TB influences the odds of being an injection drug user*

*4. Determine whether having an STD influences the odds of being an injection drug user*

*5. Determine whether any of the above relationships are influenced by either race or sex*

**APPROACH**

***Data Source***

The following project will be a secondary analysis of publicly available data. The data are obtained from The National Archive of Criminal Justice Data (NACJD) through the University of Michigan. The United States Department of Justice, Bureau of Justice Statistics collected the data and serve as the Principal Investigators. The data are part of the “Survey of Inmates in Local Jails Series.” The data were collected in 2002 and were released to the public in 2012. The 2002 dataset is the most current dataset that is available to the public from this series. A new dataset will not be released until 2022. The investigators conducted nationally representative personal interviews of 7,000 people incarcerated in local jails (James, 2004). Information on demographics, conviction types, income, correctional programs, mental health and substance use issues, other health issues, and related treatment were collected (“Survey of Inmates in Local Jails, 2002 [United States],” n.d.).

***Study population***

The study will include all incarcerated adults, above the age of 18 in the data set

***Variables***

I will use the following variables in my analysis:

* Dependent variable: Ever injected drugs (yes/no)
* Independent variables: TB test result (positive/negative); HIV test result (positive/negative); AIDS test results (positive/negative); ever had hepatitis; ever had STD
* Confounding variables: Sex, Race (dichotomized in data set to be black vs. no black)

***Reproducibility plan***

I will thoroughly document the steps I am taking to conduct my analysis, taking special note of my logic when making certain decisions. I will use an R Markdown file and will heavily annotate each section. Towards the end of my project, I will ask a friend to read through the code to see if they get similar results. I will also store my files on Github and annotate those as well.

***Statistical analysis***

I plan to use R (version 3.6.1) and R Studio (version 1.1.463) for all data cleaning and analyses. I will first perform descriptive statistics on the study population (i.e. breakdown of each variable, median age, etc.). I plan to use a binomial logistic regression for the statistical analysis.

**APPENDICIES**

***References***

Cloud, D. (2014). *On Life Support: Public Health in the Age of Mass Incarceration*. New York, NY. Retrieved from https://storage.googleapis.com/vera-web-assets/downloads/Publications/on-life-support-public-health-in-the-age-of-mass-incarceration/legacy\_downloads/on-life-support-public-health-mass-incarceration-report.pdf

Correctional Facilities | TB in Specific Populations | TB | CDC. (n.d.). Retrieved March 24, 2020, from https://www.cdc.gov/tb/topic/populations/correctional/default.htm

Health Organization Regional Office for Europe, W. (2014). *The WHO Regional Office for Europe*. Retrieved from www.euro.who.int

Hepatitis C Questions and Answers for Health Professionals | CDC. (n.d.). Retrieved March 24, 2020, from https://www.cdc.gov/hepatitis/hcv/hcvfaq.htm#section2

James, D. (2004). *Profile of Jail Inmates, 2002*. Washington, D.C.

*Multi-city study on drug injecting and risk of HIV infection: A report prepared on behalf of the WHO International Collaborative Group. Genva: World Health Organization*. (1995). Geneva.

Survey of Inmates in Local Jails, 2002 [United States]. (n.d.). Retrieved November 20, 2019, from https://www.icpsr.umich.edu/icpsrweb/NACJD/studies/4359

Wiehe, S. E., Rosenman, M. B., Aalsma, M. C., Scanlon, M. L., & Fortenberry, J. D. (2015). Epidemiology of sexually transmitted infections among offenders following arrest or incarceration. *American Journal of Public Health*, *105*(12), e26–e32. https://doi.org/10.2105/AJPH.2015.302852

***Project timeline***

* March 25-April 1: Clean the data to be used for the analysis and do more background research
* April 1-8: Conduct the analysis (run the regression) and interpret the results
* April 8-15: Write the discussion section
* April 15: Submit abstract draft (analysis should be complete by this point)
* April 15-22: Make sure written portion is complete, proof read and review the code; make a presentation
* April 22: Submit abstract, code, and PowerPoint by 2pm

***Roles***

I am doing everything for this project

**NOTE:** All individuals/groups are encouraged to make an appointment with me to go over your concept proposal once you have a draft to ensure feasibility/clarity.