**Methods:** Data set name(s), dates of data collection, demographic description and size of the study population, inclusion/exclusion criteria, study design, exposures/interventions, covariates, outcomes, and statistical approach, including power calculations

**Study Population and Design**

The Youth Risk Behavior Surveillance System (YRBSS) includes representative samples of 9th through 12th-grade students from local school-based surveys as well as national, state, territory, tribe, and tribal government surveys. Every two years, usually during the spring semester, these surveys are carried out. The health and education departments of each state, territory, and locality undertake surveys to gather information typical of most public high school students in each jurisdiction. The study participants were collected from the Youth Risk Behavior Surveillance System (YRBSS) high school 2019 dataset. We included participants who were enrolled in high schools of selected states and local school districts aged from 12 years to 18 years or older without missing data. State, territorial, tribal government, and local school district surveys with representative1 and no representative2 data are displayed. The YRBSS 2019 state survey does not conducted in Minnesota, Oregan, Washington, and Wyoming states. The local high school district data were collected from 15 local high school districts provided by the YRBSS, including, Broward County, FL, Chicago, IL, Eaton Consortium, MI, Fort Worth, TX, Genesee Consortium, MI, Hillsborough County, FL, Los Angeles, CA, Newark, NJ, Orange County, FL, Palm Beach County, FL, Pasco County, FL, Philadelphia, PA, Portland, OR, Shelby County, TN. **The local school district data included 2,723 participants.** The state data were collected from 12 states provided by the YRBSS state data after removing all the missing values, including Alabama, Arkansas, Illinois, Iowa, Kentucky, Michigan, Mississippi, Nebraska, Oklahoma, Pennsylvania, South Carolina, and West Virginia. **The state data included 3,797 participants.** The YRBSS dataset provides de-identified data, which did not include any personal identifier and human subjects' direct contact. The Institutional Review Board (IRB) did not conduct the IRB review process. The consent process is waived.

**Measures**

All outcome and exposure variables were derived from the survey questions. The primary outcome is derived from the Youth Risk Behavior Survey question Q85:

During the past 12 months, have you been tested for a sexually transmitted disease (STD) other than HIV, such

as chlamydia or gonorrhea?

A. Yes

B. No

C. Not sure

The independent variables include demographic variables, unintentional injuries and violence factors, tobacco use, alcohol and other drug use, risky sexual behavior, and cognitive and health factors. The demographic factors include age, sex, grade, BMI, and race, which were collected from YRBS questions Q1, Q2, Q3, and Q5. The unintentional injuries and violence factors include Birth Control Use (qnothhpl), physical fights (Q17), Dating-related forced sexual activities (Q21), Bullying on school property (Q23), and Suicidal thoughts (Q26). The tobacco use is collected from the question: Tried cigarette smoking (Q30). Alcohol and other drug use factors collected from survey questions: Alcohol consumption (Q41), Marijuana use (Q47), Prescription pain medicine misuse (Q49), Cocaine use (Q50), Heroin use (Q52), and Methamphetamine use (Q53). Risky sexual behavior factors collected from survey questions: Condom use (Q63) and Sexual contact with different genders (Q65). Cognitive and health factors collected from the survey questions: HIV testing (Q84), Asthma diagnosis (Q87), and School grades (Q89). The detailed survey questions are described in the supplemental material.

**Statistical Analysis**

**Data Cleaning and Feature Selection**

The state and local school district datasets were derived from the Combined YRBS High School Datasets by selecting related risk factors based on a clinical assessment of variables that could contribute to the outcome - STD testing.