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Apr 6th, 10:00 AM - 11:00 AM

The Association Between Substances Related Behavior and High Blood Pressure Among Women in the United States

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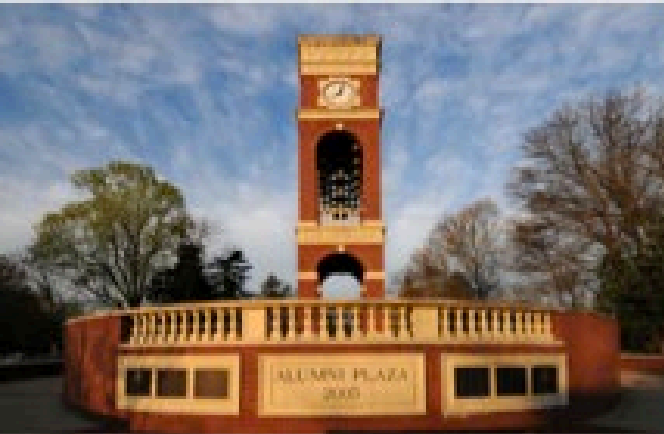
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The Association between Substance-related Behavior and High Blood Pressure among Women in the United States

**Appalachian Student Research Forum
April 6-7, 2022**

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Department of Health Services Management and Policy

Background -- Cardiovascular Disease

- CVD is the leading cause of death in the US.
 - **\$216** billion in health care expenditures
 - **\$147** billion in lost job productivity
 - Over **\$1 trillion** in medical costs and productivity losses projected by 2035
- Higher prevalence of CVD in men, but more death in women
 - CVD is the leading cause of death in women
 - **299,578** female deaths due to CVD in 2019
 - Nearly one in every four female deaths – **22%** 



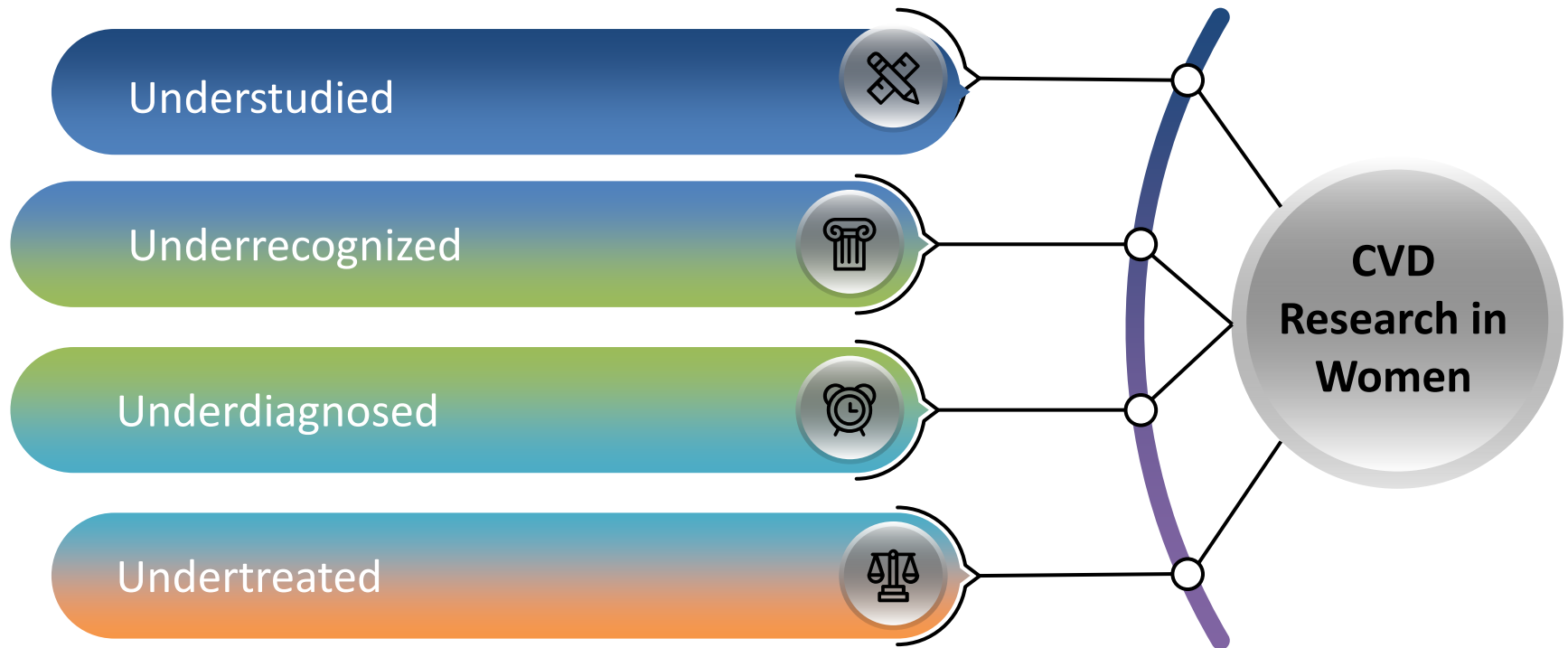
Background – Substance-related Behavior

- Patients with CVD are more likely to smoke or drink.
- Patients who smoke are two times more likely to have CVD compared to those who do not smoke.
- Amongst CVD patients, alcohol use is associated with 1.5 to 3 times higher odds of death.



Study Justification

High blood pressure is the single-largest risk factor for Cardiovascular Disease (CVD) in women.



Study Aims

- 1) Examine the association between smoking and high blood pressure among adult women.
- 2) Examine the association between binge drinking and high blood pressure among adult women.



Methods – Study Population

- Cross Sectional Study
- 2019 Behavioral Risk Factor Surveillance System (BRFSS)
- Study population – adult women



Methods– Key Variables

Dependent Variable

1) High Blood Pressure (HBP)

- *YES*: Women who were told they have HBP, borderline high or pre-hypertensive
- *NO*

Independent Variables

1) Smoking (4 levels)

- Everyday smoker
- Someday smoker
- Former smoker
- Non-smoker

2) Binge drinking

- *YES*: Women who took 4+ drinks on one occasion
- *NO*



Methods -- Data Analysis

- Characteristics of the study population
- Chi-square test for independence
 - HBP and smoking
 - HBP and binge drinking
- Multivariable regression analysis
 - Covariates – age, race, educational attainment, income, body mass index, blood cholesterol



Results

Total Survey
Respondents

418,264

Total Survey
Respondents

Female Respondents

227,706

54% accounts for
women

Age

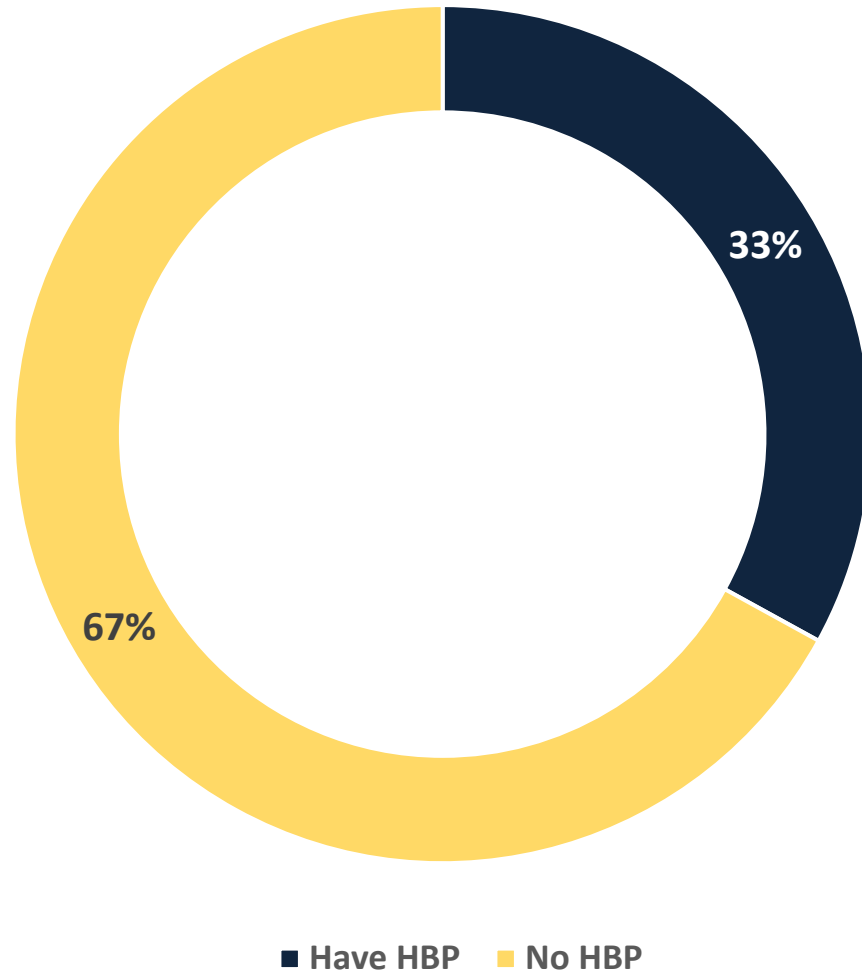
18-34 (28.3%)

35-64 (48.5%)

65+ (23.2%)

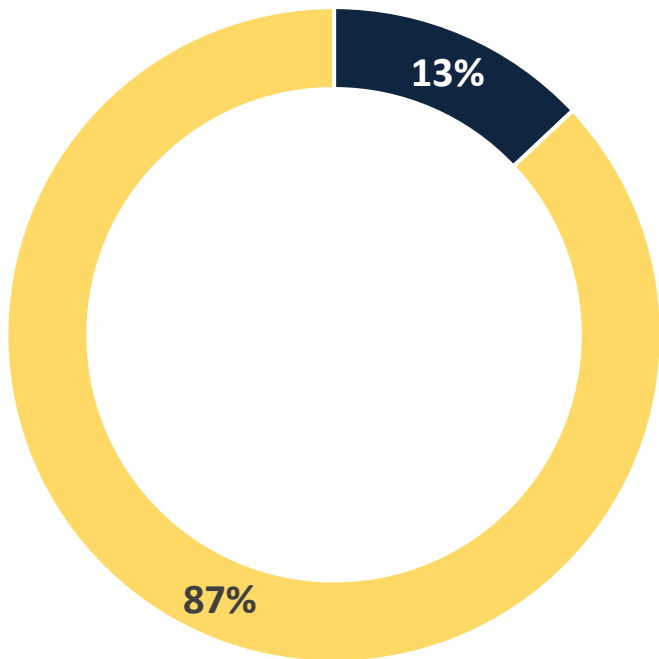


Results – HBP Prevalence



Results – Binge Drinking and Smoking Prevalence

- Four levels of smokers



■ Binge Drinking ■ No Binge Drinking

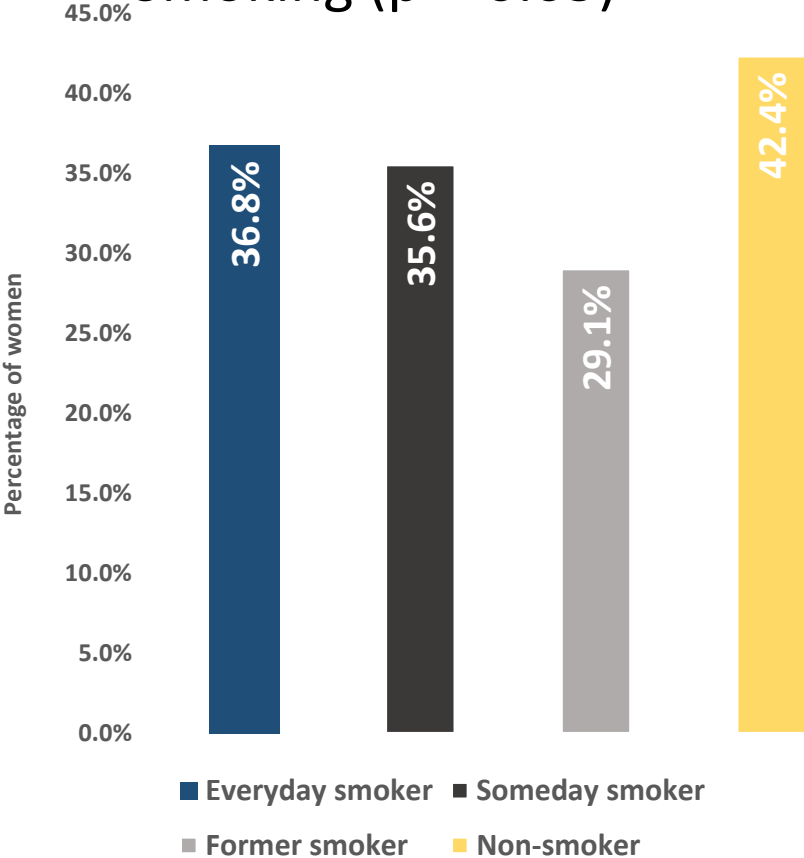
Smoking level	Percentages
Everyday smoker	9.6%
Someday smoker	3.9%
Former smoker	65.8%
Non-smoker	20.7%



Results – Bivariate Analysis

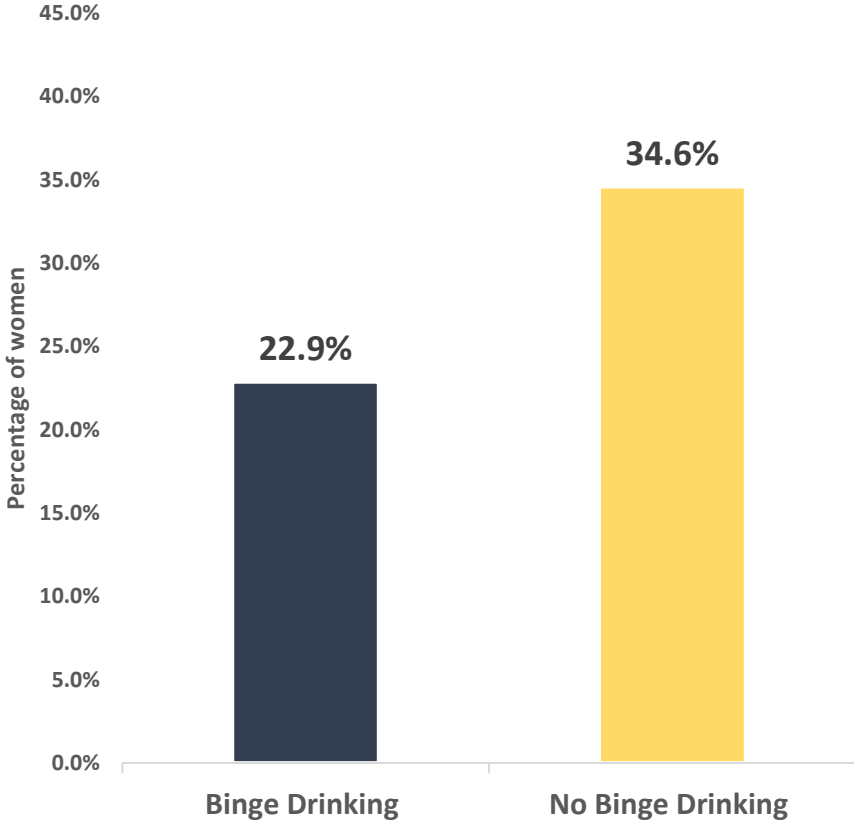
- High blood pressure

- Smoking ($p < 0.05$)



- High blood pressure

- Binge drinking ($p < 0.05$)



Results – Multivariate Analysis

- Association attenuated when adjusting for other socio-demographic characteristics
- Limitations
 - Cross-sectional -> may have changed behavior due to HBP diagnosis



Conclusion

- High prevalence of substance use & HBP in the study population requires further exploration
- Awareness and greater recognition of the long term consequences of substance related behavior
- Public health interventions should be tailored towards women at high risk for HBP
- Inclusion of women in CVD research for studies, diagnosis, treatment and clinical trials



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