East Tennessee State University

Digital Commons @ East Tennessee State University

Appalachian Student Research Forum & Jay S. Boland Undergraduate Research Symposium

2022 ASRF Schedule

Apr 7th, 9:00 AM - 12:00 PM

The Effect of Heavy Alcohol Consumption On Coronary Heart Disease Among U.S. Adults: Using The 2020 BRFSS Annual Survey Data

Olajide Olagunju
Department of Biostatistics and Epidemiology, College of Public Health, East Tennessee State University, Johnson City TN 37614

Sheryl Strasser
Department of Health Promotion & Behavior, Georgia State University, School of Public Health, Atlanta, GA 30302, USA

Yan Cao
Research Center, College of Nursing, East Tennessee State University, Jonhson City,TN 37614

Shimin Zheng Ph.D.
East Tennessee State University

Follow this and additional works at: https://dc.etsu.edu/asrf

Olagunju, Olajide; Strasser, Sheryl; Cao, Yan; and Zheng, Shimin Ph.D., "The Effect of Heavy Alcohol Consumption On Coronary Heart Disease Among U.S. Adults: Using The 2020 BRFSS Annual Survey Data" (2022). *Appalachian Student Research Forum & Jay S. Boland Undergraduate Research Symposium*. 59.
https://dc.etsu.edu/asrf/2022/schedule/59

This Poster Presentation is brought to you for free and open access by the Events at Digital Commons @ East Tennessee State University. It has been accepted for inclusion in Appalachian Student Research Forum & Jay S. Boland Undergraduate Research Symposium by an authorized administrator of Digital Commons @ East Tennessee State University. For more information, please contact digilib@etsu.edu.

The Effect of Heavy Alcohol Consumption On Coronary Heart Disease Among U.S. Adults: Using The 2020 BRFSS Annual Survey Data

Olajide Olagunju[1], Sheryl Strasser[2], Yan Cao[3], Shimin Zheng[1*]

[1]Department of Biostatistics and Epidemiology, College of Public Health, East Tennessee State University
[2]Department of Health Promotion & Behavior, Georgia State University School of Public Health
[3]Research Center, College of Nursing, East Tennessee State University, *Sponsoring faculty

BACKGROUND

- Significant evidence support that there is a significant yet non-linear relationship between alcohol consumption and cardiovascular diseases specific morbidity and mortality among US adults. Several studies demonstrated that moderate and heavy alcohol consumption reduces the risk of coronary artery disease (CHD). However, results have been inconsistent among heavy drinkers. .

OBJECTIVES

- To investigate the effect of heavy alcohol consumption on Coronary heart disease (CHD) among U.S adults.

METHODS

Study Population: Data from the 2020 Behavioral Risk Factor Surveillance System (BRFSS), an annual cross-sectional survey administered to a nationally representative sample of Americans to collect information about their health-related risk behaviors, chronic health conditions, and the use of preventive services, was used in this study. Data was collected via a self-reported questionnaire. A total of 398,656 cases were included in this study. Outcome Variable: Coronary Artery Disease (CHD). Exposure variable: Heavy Alcohol Consumption. Multiple logistic regression analysis was conducted to determine the association between the history of CHD and heavy alcohol consumption among different subgroups. Heavy alcohol use was defined as consuming greater than 14 drinks (1drink =12 ounces of beer) per week for men and 7 drinks per week for women. The model was adjusted for other risk factors such as demographics variables, lifestyle behaviors, and overweight or obesity status. The data were analyzed using SAS v 9.4.

Key Findings

- Overall, the odds of having coronary heart disease (CHD) among heavy alcohol drinkers was found to be 42% less than in individuals who were not heavy alcohol drinkers. (adjusted odds ratio (aOR); 0.58, 95% confidence interval (CI):0.50-0.68),

CONCLUSION

- The study findings demonstrate that heavy alcohol consumption is a protective factor for CHD among people aged >44 and that heavy alcohol consumption is more protective among females and blacks.
- Future research that explores the type of alcohol consumed and other behavioral factors might moderate the results.

Logistic Regression Analysis on Coronary Heart Disease

Variables	Crude OR			Adjusted OR		
	OR	p-value	CI	OR	p-value	CI
Age (ref: 18~24)						
≥ 65	39.22	<.0001	(31.61, 48.67)	29.51	0.1452	(18.53, 47.00)
55~64	18.43	<.0001	(14.83, 22.90)	13.92	0.0010	(8.71, 22.24)
45~54	8.89	<.0001	(7.13, 11.08)	7.19	<.0001	(4.47, 11.56)
35~44	3.15	<.0001	(2.50, 3.97)	2.31	<.0001	(1.40, 3.82)
25~34	1.69	<.0001	(1.32, 2.17)	1.49	<.0001	(0.87, 2.56)
Sex						
Male vs Female	1.66	<.0001	(1.57, 1.76)	1.73	<.0001	(1.63, 1.85)
Race						
Non-Hispanic White vs Hispanic	2.05	<.0001	(1.93, 2.18)	1.34	0.0001	(1.16, 1.56)
Other Race vs Hispanic	1.41	<.0001	(1.30, 1.53)	1.20	0.0498	(1.00, 1.44)
Non-Hispanic Black vs Hispanic	1.51	<.0001	(1.39, 1.63)	1.33	0.0032	(1.10, 1.61)
Smoke						
Yes vs No	2.08	<.0001	(2.02, 2.13)	1.70	<.0001	(1.60, 1.81)
Heavy Alcohol						
Yes vs No	0.55	<.0001	(0.52, 0.59)	0.58	<.0001	(0.50, 0.68)
Heavy Alcohol by Sex						
Female	0.52	<.0001	(0.41, 0.66)	0.58	<.0001	(0.46, 0.74)
Male	0.55	<.0001	(0.46, 0.67)	0.58	<.0001	(0.48, 0.71)
Heavy Alcohol by Age						
18~24	1.25	0.60	(0.54, 2.90)	NA	NA	NA
25~34	1.42	0.09	(0.94, 2.12)	0.78	0.6	(0.31, 2.00)
35~44	1.04	0.83	(0.75, 1.43)	1.06	0.85	(0.56, 2.01)
45~54	0.78	0.02	(0.63, 0.96)	0.53	0.0090	(0.33, 0.86)
55~64	0.71	<.0001	(0.62, 0.82)	0.57	0.0003	(0.42, 0.77)
≥ 65	0.61	<.0001	(0.55, 0.67)	0.56	<.0001	(0.45, 0.69)
Heavy Alcohol by Race						
Non-Hispanic White	0.53	<.0001	(0.49, 0.57)			
Non-Hispanic Black	0.44	<.0001	(0.30, 0.66)			
Hispanic	0.84	0.24	(0.62, 1.13)	0.55	0.16	(0.24, 1.27)
Other Race	0.56	0.0003	(0.41, 0.77)			
Heavy Alcohol by Exercise						
Exercise	0.53	<.0001	(0.49, 0.58)	0.61	<.0001	(0.51, 0.73)
No Exercise	0.64	<.0001	(0.57, 0.72)	0.52	<.0001	(0.39, 0.69)
Heavy Alcohol by Overweight/Obesity						
Overweight/Obesity	0.57	<.0001	(0.51, 0.61)	0.61	<.0001	(0.51, 0.73)
Normal Weight	0.54	<.0001	(0.47, 0.62)	0.51	<.0001	(0.37, 0.68)
Exercise						
Yes vs No	0.50	<.0001	(0.48, 0.51)	0.60	<.0001	(0.56, 0.64)
Exercise by Age						
18~24	0.62	0.0691	(0.37, 1.04)	0.96	0.95	(0.27, 3.37)
25~34	0.65	0.0038	(0.48, 0.87)	1.12	0.77	(0.52, 2.41)
35~44	0.56	<.0001	(0.46, 0.67)	0.56	0.0073	(0.37, 0.86)
45~54	0.40	<.0001	(0.36, 0.44)	0.41	<.0001	(0.33, 0.51)
55~64	0.51	<.0001	(0.48, 0.54)	0.58	<.0001	(0.50, 0.67)
≥ 65	0.65	<.0001	(0.63, 0.67)	0.64	<.0001	(0.59, 0.69)
Overweight						
Yes vs No	1.53	<.0001	(1.48, 1.58)	1.39	<.0001	(1.29, 1.49)