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Apr 25th, 9:00 AM - 11:00 AM

### Depression and Other Associated Risk Factors with Hypercholesterolemia Among Adults in Tennessee (findings from BRFSS 2021)

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# Depression and other Associated Risk Factors of Hypercholesterolemia Among Adults in Tennessee

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## BACKGROUND

- Hypercholesterolemia is a leading risk factor for cardiovascular diseases, with an average of 102.3 million American diagnosed with Hypercholesterolemia. Medical conditions, lifestyle habits, hereditary factors, and psychiatric illnesses have been associated with Hypercholesterolemia. A few studies postulate that Hypercholesterolemia leads to brain changes that underlie depressive illness.
- Depression is anticipated to overtake chronic diseases like hypertension in developed nations by 2030, and over 17 million US adults suffer from depression. Tennessee ranks 9<sup>th</sup> (22.36%) out of 50 states with the highest depression rates, with the incidence rising steadily. As a major public health concern needing urgent attention, it is imperative to establish the association between depression and Hypercholesterolemia among adults in Tennessee.

## OBJECTIVES

- To study the effect of hypercholesterolemia on depression in Tennessee.

## METHODS

- We used cross-sectional data from the 2021 Behavioral Risk Factor Surveillance System a nationally representative U.S. telephone-based survey of adults aged 18 years, and extracted data for Tennessee (n=4,788). Logistic regression analyses were conducted to test the association between diet, physical activity, depression, no past month exercise, high body mass index, substance use, and high cholesterol (outcome). We controlled for income, race, educational status, health insurance status, and age.

## RESULTS

- Overall, 36.1% (n=1,726) of participants in our sample reported high cholesterol. Results of our logistic regression model revealed that depression (OR =1.37, 95% CI, 1.19, 1.58), High body mass index (OR=1.75, 95% CI, 1.52,1.99), no past month exercise (OR=1.45, 95% CI, 1.27,1.66), male gender (OR =1.16, 95% CI, 1.03, 1.32) and low income (OR =1.33, 95% CI, 1.15, 1.53) were associated with high cholesterol.
- Furthermore, participants with high cholesterol are 37% more likely to report depression. On the other hand, cigarette use, e-cigarette use, alcohol use, no insurance, and marijuana use were not significantly linked.

**Table 1: Logistic regression analyses of risk factors of hypercholesterolemia**

Effect	Point Estimate	95% Wald Confidence Limits
No Insurance	0.381	0.286 – 0.507
Low Income	1.326	1.148 – 1.532
Ethnicity	0.705	0.596 – 0.833
No high school	1.270	1.000 – 1.614
Alcohol Use	0.722	0.680 – 0.878
Male Gender	1.164	1.026 – 1.320
Smoking Status	1.067	0.902 – 1.261
Depression	1.368	1.186 – 1.577
High BMI	1.748	1.529 – 1.998
No Exercise	1.450	1.266 – 1.660

## CONCLUSION

- There is a need for awareness and prevention of Hypercholesterolemia in patients managed for depression, as they might die from the complications of high cholesterol rather than the psychiatric illness itself. It is important to intensify the existing programs and interventions for the prevention of Hypercholesterolemia, which would favorably impact on the burden of depression among adults in Tennessee. Also, studies should be done on the outcomes of cholesterol-reducing medications to prevent Hypercholesterolemia in patients with chronic diseases and depressed patients.

