

The Association between Depression and Heart Attack: Examining Demographic and Behavioral Correlates in Tennessee

Manik Ahuja¹ , Achala Ghimire¹, Kajol Dahal¹ ,
Esther Adebayo-Abikoye¹, Hadii Mamudu¹, Jeetendra Patel² ,
McKenzie Dooley¹, Thiveya Sathiyaseelan³,
Chukwubuikem James Arize¹, Johanna Cimilluca¹,
Nathaniel Keaton¹, Jennifer S. Tinman⁴ , Rhonda Williams¹ ,
Sana Hasan¹ and Praveen Fernandopulle^{5,6}

Abstract

Background: Cardiovascular diseases (CVD) and depression are growing global health concerns as heart attack and stroke solely account for around 85% of total CVD deaths and 280 million ie, while 3.4% of the world's population have depression. A bi-directional relationship exists between depression and heart disease: about one-fourth of heart disease patients experience depression, and those with depression have a higher risk of developing heart disease compared to the general population. This study aims to examine the association between depression and heart attack as a dependent variable, focusing on demographic and behavioral correlates of individuals in Tennessee.

Methods: We performed a cross-sectional analysis using the 2022 Behavior Risk Factor Surveillance System (BRFSS) data for Tennessee (N = 5266). Our analytical approaches involved descriptive and multivariate analysis (logistic regression analysis) to assess the association between depression and heart attack in Tennessee. The primary dependent variable of interest was a self-reported lifetime heart attack and independent variables included self-reported lifetime depression, no exercise in the past 30 days, smoking status, race/ethnicity, gender, and age category.

Results: A total of 7.5% (N = 731) of participants reported lifetime heart attack and 27.8% (N = 828) of participants reported depression. Depression was found to be significantly associated with higher odds of a heart attack (AOR = 1.36; 95% CI, 1.06, 1.73), $p < 0.001$). Similarly, no exercise in the past 30 days (AOR = 1.74; 95% CI, 1.39, 2.20, $p < 0.001$) was also associated with higher odds of a heart attack. Furthermore, low income, current smoking status, and race/ethnicity were not found to be significantly associated with heart attack in our study.

Conclusion: This study reinforces the significant link between depression and heart attack while highlighting the complex interplay of demographic and behavioral factors influencing onset of cardiovascular diseases. The findings underscore the necessity for a comprehensive approach to cardiovascular health that integrates mental health considerations and addresses broader social determinants of health.

Keywords

heart attack, cardiovascular disease, depression, Tennessee

Received 22 October 2024; accepted 17 February 2025

¹College of Public Health, East Tennessee State University, Johnson City, TN, USA

²Department of Medicine, Division of Cardiology, East Tennessee State University, Johnson City, TN, USA

³Wellmont Health System LPH Family Medicine Residency Program, Ballad Health, Big Stone Gap, VA, USA

⁴School of Public Health and Information Sciences, University of Louisville, Louisville, KY, USA

⁵Quillen College of Medicine, East Tennessee State University, Johnson City, TN, USA

⁶Department of Psychiatry, James H. Quillen Department of Veterans Affairs Medical Center, Johnson City, TN, USA

Corresponding author:

Manik Ahuja, Department of Health Services Management and Policy, East Tennessee State University, 41B Lamb Hall, Johnson City, TN 37614.
Email: ahujam@etsu.edu



Background

Cardiovascular diseases (CVD) now account for almost one-half of the noncommunicable disease deaths worldwide.¹ CVD accounts for 19 million, ie, 32% of all deaths worldwide, among which 7.4 million of these are caused by coronary heart disease. An estimated 523 million people had some form of CVD in 2020, an absolute increase of 18.7% from 2010.² Heart attack, also known as myocardial infarction, is caused by plaque buildup in arteries, causing coronary circulation's failure to supply adequate blood to cardiac muscle and surrounding tissues.³

Similarly, mental health disorders ranks among the most substantial causes of death worldwide and is one of the major contributors to the global burden of diseases.^{4,5} Depression is a highly prevalent mental health disorder worldwide.⁴ Depression and heart attack each contribute significantly to the global disease burden.^{6–9} Furthermore, they share a bidirectional relationship, with depression serving as an independent risk factor for heart attack and heart attack, similarly increasing the risk of developing depression.¹⁰ Depression is found to be three times more common among people after a heart attack compared to the general population.⁷ In a cross-sectional study conducted among 388 hospitalized cardiac patients, 40% had clinically significant depression, and 78.4% had non-minimal depression. It was greater in women (83.1%) than men (72.9%).¹¹

One study found that post-myocardial infarction depression significantly increases mortality risk compared to individuals without post-MI depression, while chronic or recovered depression post-MI does not.¹⁰ Depression is seen as highly prevalent in cardiac patients, among which 20–40% of patients later develop a chance of progression of coronary artery disease and other conditions eventually increasing the risk of mortality by 2 to 2.5 times.¹² A case-control study found that the patients with a first myocardial infarction exhibited higher rates of depression than matched controls but were less likely to receive antidepressant treatment.¹²

Similarly, there is a strong association between female gender and depression. Depression is found to be 2–3 times more likely in women than men.¹³ According to the National Institute of Mental Health, adult females (10.3%) experienced major depressive episodes compared to adult males (6.2%).¹⁴ According to a CDC study, one in ten women in the US had symptoms that indicate they may have had a major depressive episode in the previous year, and 1 in 8 women experienced symptoms of depression after giving birth.¹⁵

Similarly, a study examining the association between the poverty-to-income ratio (PIR) and depressive symptoms found that people with low PIR (1.30) and medium PIR (1.55) experienced a higher relative risk of having depressive symptoms.¹⁶ A total of 15,674 people in Tennessee lost their lives in 2015 due to heart disease, which was almost 24% of

all deaths in Tennessee in 2015. Tennessee recorded the seventh-highest heart disease rate and third-highest age-adjusted stroke in the United States in 2014.¹⁷ In Tennessee 43.5% of adults were experiencing symptoms of anxiety or depression in 2021 among which 25.6% did not have access to counseling or therapy.¹⁸ Similarly, rates of depression have been found to be significantly higher in Tennessee in comparison to national averages.¹⁹ A significant gap in the literature was found, as limited work has been conducted on assessing the association between heart attack and depression, particularly in Tennessee. This current study explores the relationship between heart attack and depression in Tennessee.

Methods

Design

We used data from the 2022 Behavior Risk Factor Surveillance System (BRFSS) conducted by the Centers for Disease Control and Prevention. The BRFSS is a yearly collection of vital health related telephone survey data across the 50 states, the District of Columbia and the three U.S. territories. Participants for the survey were selected randomly by dialing on landlines and mobile phones and asked about health-related risk behaviors, utilization of health services and chronic diseases. The data is de-identified making it available for secondary analysis. This study included all individuals from the state of Tennessee ($n = 5,266$) that were available in the BRFSS dataset. Given that a de-identified data was used for this study and following the Federal Regulations Common Rule 45, Institutional Review Board (IRB) review was not required.

Primary Dependent Variable

The primary dependent variable of interest was self-report of lifetime heart attack.

Independent Variables

Depression, exercise in the past 30 days, smoking status, income, education, race, sex, and age were used as independent variables. Depression was based on participant self-report of lifetime depression. Exercise was based on self-report of exercise in the past 30 days, with no exercise representing 1, and any exercise representing 0. Sex was coded dichotomously for male and female. Smoking status was determined based on the survey question about the frequency of days respondents currently smoke, with 1 representing a current smoker and 0 representing a non-current smoker. Race/ethnicity was dummy coded into the following race groups: White-Non-Hispanic (referent), Black Non-Hispanic, Hispanic, Asian, and other race/ethnicity. Household income was coded binary as: <\$35,000 per year, and $\geq$ \$35,000 per

year. Similarly, education was coded binary as: did not complete high school and completed high school. Age was categorized into three groups, 18–34 (referent), 35–54, and 55 and older.

Data Analysis

Data cleaning and recoding of variables were conducted in SAS (version 9.4), with analyses performed in Stata Version 14 (Stata Corp LP, College Station, TX, USA). Descriptive statistics and prevalence for the sample are presented in Table 1. Logistic regression (Table 2) analysis was used to assess the association between depression and the dependent variable of self-reported lifetime heart attack and adjusted results were provided. Other covariates and controls that were included in the model include did not exercise in the past 30 days, low income, less than high school education, smoking status, race, sex, and age. All results were weighted using weights to adjust for the complex sampling design and provide population-based estimates.

Results

Descriptive statistics were presented in Table 1. Overall, 7.5% ($n=371$) of participants reported lifetime heart attack, while 27.8% ($n=1463$) reported depression. The association between depression and heart attack as the dependent variable was presented in Table 2. Depression was significantly associated with heart attack (AOR = 1.36; 95% CI, 1.06,

1.73, $p<0.001$). No exercise in the past 30 days (AOR = 1.74; 95% CI, 1.39, 2.20, $p<0.001$) was also associated with higher odds of a heart attack.

Discussion

We investigated the relationship between depression and the dependent variable of lifetime heart attack, controlling for several demographic and behavioral factors, including age, race, sex, education, income, exercise habits, and smoking status. The results revealed a significant association between depression and an increased odds of heart attack, emphasizing the critical influence of mental health on cardiovascular outcomes.

Depression was found to be a significant factor for heart attack in our analysis, with those experiencing depression being approximately 36% more likely to suffer a heart attack compared to those without depression. This finding aligns with contemporary research that continues to affirm the strong link between depression and CVD.^{20–22} Furthermore, depression is often associated with poor health behaviors, such as physical inactivity, smoking, and poor adherence to medical treatments, which compound cardiovascular risk.^{23–25} Similarly, there are more study that shows depression to be often associated with premature CVD and suboptimal CVH (Cardiovascular Health).⁶

Age was identified as the most significantly associated factor of heart attack, with older individuals showing a higher prevalence of heart attack. This finding is consistent with the well-documented progression of cardiovascular risk with age due to factors such as the advancement of cardiac structural and functional modifications and other age-related vascular changes.^{9,26} Similarly, sex differences

Table 1. Descriptive statistics and characteristic of sample ($N=5266$).

Variable	N, %
Heart Attack	371 (7.5)
Depression ^a	1463 (27.8)
Current smoking	781 (16.5)
Did not exercise past 30 days	1522 (28.9)
Gender	
Male	2521 (47.9)
Female	2745 (52.1)
Income <\$35,000	1419 (27.0)
Education: < High school	402 (7.6)
Race/Ethnicity	
White Non-Hispanic	4248 (80.8)
Black Non-Hispanic	629 (11.9)
Hispanic	176 (3.3)
Asian	46 (0.9)
American Indian/Alaska Native	56 (1.1)
Other race/non-Hispanic	111 (2.1)
Age category	
18–34	958 (18.2)
35–54	1509 (28.7)
55 and older	2799 (53.2)

a = based on self-report

Table 2. Logistic regression analysis between self-report of Depression and Heart Attack^a as dependent variable.

Variable	OR, 95% CI
Depression	1.36 (1.06–1.74)*
Current smoker	1.25 (0.95–1.63)
Did not exercise in the past 30 days	1.74 (1.39–2.20)*
Low income	1.73 (1.37–2.19)*
< High school education	1.94 (1.43–2.65)*
Gender (Male)	2.08 (1.64–2.61)*
Race/Ethnicity ^b	
Black	0.82 (0.58–1.10)
Hispanic	1.27 (0.64–2.51)
Asian	0.43 (0.29–0.60)*
American Indian/Alaska Native	1.32 (0.58–2.98)
Age Category ^c	
35–54	3.09 (2.48–3.72)*
55 and older	8.68 (7.80–9.38)*

a = Lifetime Diagnosis of Heart Attack, b = White/Caucasian is used as the reference category, c = Age 18–34 is used as the reference category.

* = $P < .05$, OR = Odds Ratio

were also apparent, with males showing more than double the risk of heart attack compared to females. This finding is in line with recent research, which indicates that while men generally have a higher incidence of CVD, women often experience worse outcomes, partly due to delays in care and differences in symptom presentation.²⁷ Education and income levels were also significant covariates, with those lacking a high school education or with lower incomes showing a higher likelihood of suffering a heart attack. These results reflect the broader impact of social determinants of health, where lower socioeconomic status correlates with higher risks for adverse health outcomes, including heart disease.²⁸ Factors contributing to this relationship include limited access to healthcare, higher stress levels associated with financial insecurity, and poorer health literacy.²⁹ Smoking, a well-recognized associated factor for heart disease, showed a trend toward higher prevalence of heart disease, however, this association did not reach statistical significance in our analysis. This may be attributed to the overwhelming influence of other covariates, such as age and sex, which are dominant factors associated with heart attack risk.^{9,30}

Our study also examined racial and ethnic disparities in heart attack risk. Interestingly, Black individuals had lower odds of experiencing a heart attack compared to their White counterparts, though this finding was not statistically significant. This result contrasts with much of the existing literature, which often reports higher rates of CVD among Non-Hispanic Black populations due to factors such as socioeconomic disparities, limited access to healthcare, and a higher prevalence of risk factors like hypertension and diabetes.^{31,32} This non-significant finding in our study suggests that more nuanced research is needed to explore the complex factors at play, including potential protective factors or sampling issues.

The odds ratio for Asian individuals was near zero, a result likely indicative of a statistical anomaly due to a small sample size. This finding should be interpreted with caution, as other studies have highlighted that Asian populations do have unique cardiovascular risk profiles that warrant further investigation.^{33,34} American Indian/Alaska Native (AI/AN) individuals displayed an elevated risk of heart attack, though this was not statistically significant. Previous research has consistently shown higher rates of CVD among AI/AN population, often linked to high prevalence of traditional risk factors such as diabetes and obesity.^{33,35} The lack of statistical significance in our study emphasizes the need for larger-scale studies to validate these associations.

These findings have significant public health implications, particularly concerning the prevention and management of heart attacks/cardiovascular disease, which can be fatal. The strong association between depression and heart attack underscores the importance of integrating mental health assessments into cardiovascular risk evaluations. Psychiatrists can effectively use approaches like cognitive-

behavioral therapy (CBT) and interpersonal therapy (IPT) to tackle depressive symptoms and enhance patients' coping mechanisms. When needed, they may prescribe antidepressants to help manage severe or ongoing depression, which can lead to improved heart health. Additionally, psychiatrists play a vital role in guiding patients toward healthier lifestyle choices, such as better nutrition, increased physical activity, and smoking cessation, all essential for both mental and cardiovascular wellness. They can also teach various stress-reduction techniques, including mindfulness practices, relaxation exercises, and biofeedback, to help alleviate the negative impacts of stress on mental and heart health. Interventions aimed at referring patients for psychiatric services and treating depression in individuals with cardiovascular risk factors could play a critical role in reducing the incidence of heart attacks. Moreover, the observed disparities based on race, sex, education, and income levels highlight the necessity for targeted public health interventions that address the social determinants of health. Efforts to reduce cardiovascular risk should prioritize vulnerable populations, especially those with lower socioeconomic status, to address the root causes of these disparities.

Our findings should be interpreted with caution, given the following limitations. First, the BRFSS survey demonstrated self-reported bias which is based on participant participation rather than screening individuals for heart disease or depression. Second, the survey used a pre-established database and pre-determined survey questions, limiting the ability to determine variables, and data is cross-sectional. Third, self-report of depression, implies that the individual has received care and treated in the medical system. These results may not include individuals who may be burdened with depression but have not been diagnosed or treated. Fourth, heart attack may be underreported, as some may be burdened with depressive systems, while suffering from a heart attack, without ever being diagnosed. For example, a silent myocardial infarction, also known as a silent heart attack.³⁶

In conclusion, this study reinforces the significant link between depression and heart attack while highlighting the complex interplay of demographic and behavioral factors influencing cardiovascular risk. This study highlights the critical need for psychiatric evaluations in patients at risk for cardiovascular disease, particularly those exhibiting symptoms of depression. Early identification and treatment of depressive disorders can significantly improve overall health outcomes and potentially reduce the incidence of heart attacks in vulnerable populations. The findings underscore the necessity for a comprehensive approach to cardiovascular health that integrates mental health considerations and addresses broader social determinants of health.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

ORCID iDs

Manik Ahuja  <https://orcid.org/0000-0002-3446-9216>

Kajol Dahal  <https://orcid.org/0000-0002-1930-8246>

Jeetendra Patel  <https://orcid.org/0009-0006-7562-9219>

Jennifer S. Tinman  <https://orcid.org/0009-0009-4154-2459>

Rhonda Williams  <https://orcid.org/0009-0007-5530-8239>

References

1. Benziger CP, Roth GA, Moran AE. The global burden of disease study and the preventable burden of NCD. *Glob Heart*. 2016;11(4):393–397. doi:10.1016/J.GHEART.2016.10.024
2. Coronado F, Melvin SC, Bell RA, Zhao G. Global responses to prevent, manage, and control cardiovascular diseases. *Prev Chronic Dis*. 2022;19:E84. doi:10.5888/PCD19.220347
3. De Hert M, Detraux J, Vancampfort D. The intriguing relationship between coronary heart disease and mental disorders. *Dialogues Clin Neurosci*. 2018;20(1):31–40. doi:10.31887/DCNS.2018.20.1/MDEHERT
4. Chahil PK. Reducing the global burden of depression. *Revue interdisciplinaire des sciences de la santé - Interdiscip J Health Sci*. 2014;4(1):49. doi:10.18192/RISS-IJHS.V4I1.1221
5. Liu Q, He H, Yang J, Feng X, Zhao F, Lyu J. Changes in the global burden of depression from 1990 to 2017: Findings from the global burden of disease study. *J Psychiatr Res*. 2020;126:134–140. doi:10.1016/J.JPSYCHIRES.2019.08.002
6. Kwapong YA, Boakye E, Khan SS, et al. Association of depression and poor mental health with cardiovascular disease and suboptimal cardiovascular health among young adults in the United States. *J Am Heart Assoc*. 2023;12(3): e028332. doi:10.1161/JAHA.122.028332
7. Williams RB. Depression after heart attack: Why should i be concerned about depression after a heart attack? *Circulation*. 2011;123(25):e639–e640. doi:10.1161/CIRCULATIONAHA.110.017285
8. Giournta AM, Alikari V, Platis C, Oikonomopoulou G, Alefragkis D, Theofilou P. Assessing the quality of life and depression among patients with heart failure and heart attack. *Health Psychol Rep*. 2020;8(3):211–218. doi:10.5114/hpr.2020.95910
9. Hamil-Luker J, O'Rand AM. Gender differences in the link between childhood socioeconomic conditions and heart attack risk in adulthood. *Demography*. 2007;44(1):137–158. doi:10.1353/dem.2007.0004
10. Galatzer-Levy IR, Bonanno GA. Optimism and death: Predicting the course and consequences of depression trajectories in response to heart attack. *Psychol Sci*. 2014;25(12):2177–2188. doi:10.1177/0956797614551750
11. Bahall M. Prevalence and associations of depression among patients with cardiac diseases in a public health institute in Trinidad and Tobago. *BMC Psychiatry*. 2019;19(1):1–11. doi:10.1186/S12888-018-1977-3/TABLES/2
12. Celano CM, Huffman JC. Depression and cardiac disease: A review. *Cardiol Rev*. 2011;19(3):130–142. doi:10.1097/CRD.0B013E31820E8106
13. Salk RH, Hyde JS, Abramson LY. Gender differences in depression in representative national samples: Meta-analyses of diagnoses and symptoms. *Psychol Bull*. 2017;143(8):783–822. doi:10.1037/BUL0000102
14. NIMH » Major Depression. Accessed August 22, 2023. <https://www.nimh.nih.gov/health/statistics/major-depression>.
15. Depression Among Women | CDC. Accessed August 20, 2023. <https://www.cdc.gov/reproductivehealth/depression/index.htm#Depression>.
16. Zare H, Meyerson NS, Adania Nwankwo C, Thorpe RJ. Citation: Zare, H how income and income inequality drive depressive symptoms in U.S. adults, does sex matter: 2005–2016. *Int J Environ Res Public Health*. 2022;19(10):6227–62016. doi:10.3390/ijerph19106227
17. *Heart Disease Still Tennessee's Top Cause of Death*, 2017. www.heart.org/HEARTORG/
18. Mental Health in Tennessee. Accessed August 22, 2023. <https://www.nami.org/NAMI/media/NAMI-Media/StateFactSheets/TennesseeStateFactSheet.pdf>.
19. Greenberg PE, Fournier AA, Sisitsky T, et al. The economic burden of adults with major depressive disorder in the United States (2010 and 2018). *Pharmacoeconomics*. 2021;39(6):653–665. doi:10.1007/S40273-021-01019-4
20. Pivato CA, Chandiramani R, Petrovic M, et al. Depression and ischemic heart disease. *Int J Cardiol*. 2022;364:9–15. doi:10.1016/j.ijcard.2022.05.056
21. Sher Y, Lolak S, Maldonado JR. The impact of depression in heart disease. *Curr Psychiatry Rep*. 2010;12(3):255–264. doi:10.1007/s11920-010-0116-8
22. Pozuelo L, Tesar G, Zhang J, Penn M, Franco K, Jiang W. Depression and heart disease: What do we know, and where are we headed? *Cleve Clin J Med*. 2009;76(1):59–70. doi:10.3949/ccjm.75a.08011
23. Paperwalla KN, Levin TT, Weiner J, Saravay SM. Smoking and depression. *Med Clin N Am*. 2004;88(6):1483–1494. doi:10.1016/j.mcna.2004.06.007
24. Ahuja M, Sathiyaseelan T, Wani RJ, Fernandopulle P. Obesity, food insecurity, and depression among females. *Arch Public Health*. 2020;78(1):1483–xi. doi:10.1186/s13690-020-00463-6
25. Stunkard AJ, Faith MS, Allison KC. Depression and obesity. *Biol Psychiatry*. 2003;54(3):330–337. doi:10.1016/S0006-3223(03)00608-5
26. Ribeiro ASF, Zeroelo BE, López-Espuela F, Sánchez R, Fernandes VS. Cardiac system during the aging process. *Aging Dis*. 2023;14(4):1105–1122. doi:10.14336/AD.2023.0115
27. Al Hamid A, Beckett R, Wilson M, et al. Gender bias in diagnosis, prevention, and treatment of cardiovascular diseases: A systematic review. *Cureus*. 2024;16(2):e54264. doi:10.7759/cureus.54264
28. Havranek EP, Mujahid MS, Barr DA, et al. Social determinants of risk and outcomes for cardiovascular disease: A scientific statement from the American Heart Association. *Circulation*. 2015;132(9):873–898. doi:10.1161/CIR.0000000000000228
29. Stringhini S, Carmeli C, Jokela M, et al. Socioeconomic status and the 25×25 risk factors as determinants of premature mortality: A multicohort study and meta-analysis of 1·7 million men and women. *Lancet*. 2017;389(10075):1229–1237. doi:10.1016/S0140-6736(16)32380-7

30. Gary-Webb TL, Egnot NS, Nugroho A, Dubowitz T, Troxel WM. Changes in perceptions of neighborhood environment and Cardiometabolic outcomes in two predominantly African American neighborhoods. *BMC Public Health*. 2020;20(1):52. doi:10.1186/s12889-019-8119-9
31. Minhas AMK, Talha KM, Abramov D, et al. Racial and ethnic disparities in cardiovascular disease - analysis across major US national databases. *J Natl Med Assoc*. 2024;116(3):258–270. doi:10.1016/J.JNMA.2024.01.022
32. Pool LR, Ning H, Lloyd-Jones DM, Allen NB. Trends in racial/ethnic disparities in cardiovascular health among US adults from 1999–2012. *J Am Heart Assoc*. 2017;6(9):e006027. doi:10.1161/JAHA.117.006027
33. Liu L, Miura K, Fujiyoshi A, et al. Impact of metabolic syndrome on the risk of cardiovascular disease mortality in the United States and in Japan. *Am J Cardiol*. 2014;113(1):84–89. doi:10.1016/j.amjcard.2013.08.042
34. Ho FK, Gray SR, Welsh P, et al. Ethnic differences in cardiovascular risk: examining differential exposure and susceptibility to risk factors. *BMC Med*. 2022;20(1):149. doi:10.1186/s12916-022-02337-w
35. Miao G, Fiehn O, Malloy KM, et al. Longitudinal lipidomic signatures of all-cause and CVD mortality in American Indians: Findings from the strong heart study. *Geroscience*. 2023;45(4):2669–2687. doi:10.1007/s11357-023-00793-7
36. Cheng YJ, Jia YH, Yao FJ, et al. Association between silent myocardial infarction and long-term risk of sudden cardiac death. *J Am Heart Assoc*. 2021;10(1). doi:10.1161/JAHA.120.017044

Author Biographies

Manik Ahuja is an Assistant Professor in the College of Public Health at East Tennessee State University. His primary area of research included substance use/addiction, mental health, and chronic disease among marginalized populations. He also focuses on suicide prevention research, particularly among race/ethnic minority populations, rural populations, and U.S. Military Veterans. He examines factors such as adverse childhood experiences, trauma, discrimination, and other factors that contribute to mental health and addiction related disparities.

Achala Ghimire is a recent graduate of East Tennessee State University with an MPH in Epidemiology. She has experience in emergency preparedness and response, disease surveillance, and antimicrobial resistance research in various water sources. Her current research interests focus on chronic disease epidemiology. Passionate about data-driven public health solutions, she aims to contribute to research that informs policies and advances public health interventions and outcomes.

Kajol Dahal is a doctoral candidate in Public Health at the Department of Health Services Management and Policy, East Tennessee State University. Her research focuses on racial and geographic disparities in healthcare utilization. She has extensive experience in epidemiological research, and large-scale data analysis. She has contributed to multiple peer-reviewed manuscripts related to healthcare access disparities, non-communicable diseases, and substance abuse related outcomes. Her work aims to inform policies, interventions, and healthcare equity strategies to improve care for high-risk populations.

Esther Adebayo-Abikoye is a public health professional, she holds a doctorate in public health. As a seasoned public health leader with expertise in public health research, program management, she integrates epidemiological insights and data-driven strategies to enhance global health outcomes and strengthen health systems across diverse populations. She excels in driving capacity-building initiatives and multidisciplinary collaborations, leveraging advanced data analytics and innovative methodologies to optimize program monitoring, evaluation, and strategic alignment with public health objectives. Her proven track record of designing and implementing scalable health interventions, from enhancing maternal and child health programs to youth violence prevention in underserved regions, delivering measurable impacts through evidence-based practices. She develops and manages complex research frameworks, conducting comprehensive policy analyses, and authoring publications that inform public health strategies, foster cross-sector partnerships, and drive actionable change.

Hadii M. Mamudu is a Professor of Public Health in the Department of Health Services Management and Policy of the College of Public Health at East Tennessee State University (ETSU), and also the Director for the Center for Cardiovascular Risk Research (CCRR). He conducts research in health behaviors/outcomes with focus on substance use, cardiovascular health, and evidence synthesis. His research on these areas spans from local to global and has been used as resource for developing scientific/policy consensus reports and creating policies by organizations and institutions, including the American Heart Association, American Public Health Association, National Institutes of Health, World Health Organizations, and World Bank.

Jeetendra Patel is an Associate Professor of medicine at ETSU Quillen college of medicine. I have a wide variety of research interests in clinical cardiology. His past research involves heart failure. I have worked on coronary anomalies, and case reports of interesting clinical cardiac cases. He actively participates in medical students, residents and fellow teaching.

McKenzie Dooley is a Master of Public Health (MPH) candidate in Epidemiology at East Tennessee State University. Her research interests include genetic epidemiology, chronic disease, and mental health disparities. She has experience analysing large datasets, conducting statistical modelling, and working with health-care providers to improve patient outcomes. Her current research examines the association between depression and heart attack, furthering her interest in the intersection of mental health and chronic disease. She has also contributed to public health initiatives related to rural health, maternal-child health, and substance use disorder treatment.

Thiveya Sathiyaseelan is the chief resident at the Lonesome Pine Family Medicine Program in Southwest Virginia. Committed to delivering healthcare to the rural Appalachian community, she takes great pride in serving underserved populations. Her research interests focus on nutrition and obesity prevention, aiming to improve health outcomes in her community.

Chukwubikem James Arize is a Board-certified Medical Practitioner, Environmental Biologist, and Public Health Expert. His areas of expertise include clinical medicine, epidemiological research, and disease prevention and control. She holds a Doctor of Medicine (MD) from Windsor University School of Medicine,

Saint Kitts and Nevis, and is currently pursuing a Master of Public Health (MPH) with a concentration in Epidemiology at East Tennessee State University. His research interests encompass cardiovascular health, emergency interventional medicine, and data-driven approaches to improving public health outcomes. He has worked as an attending physician in both private and public hospitals, as well as in regional health departments.

Johanna Cimilluca holds a DrPH in Health Services Management and Policy and has a diverse background in healthcare administration, finance, and policy. Her research focuses on mental and behavioral telehealth, healthcare operations, and policy implementation. She has extensive experience in program management, fiscal oversight, and academic administration within major healthcare institutions.

Nathaniel Keaton is a graduate of East Tennessee State University, where he earned a degree in Biology and Psychology. Driven by a keen interest in the interplay between mental and physical health, he is eager to further develop his research skills in public health and epidemiology.

Jennifer Tinman is a PhD candidate in the Department of Health Promotion and Behavioral Sciences at the University of Louisville's School of Public Health and Information Sciences. Her research focuses on adverse childhood experiences (ACEs) and behavioral health, including substance use and mental health. She has been involved in research pertaining to cervical cancer, environmental health, sexual health, and behavioral health.

Rhonda Williams is a Doctor of Public Health student at East Tennessee State University (ETSU) College of Public Health in the concentration of Health Services Management and Policies

(HSMP). She holds a Master of Science in Infectious Diseases and One Health (IDOH), which she earned as a joint degree with the Université de Tours in France, Universitat Autònoma de Barcelona in Spain, and the University of Edinburgh in Scotland, United Kingdom. Before that, she completed a Master of Public Health degree at the University of Roehampton in London, United Kingdom. Her educational background also includes a Doctor of Medicine degree from the Latin American School of Medicine Calixto Garcia in Havana, Cuba, and a Diploma in Animal Health and Veterinary Public Health from the Guyana School of Agriculture. Her research interests lie in Health Services Management and Policies, women's health, Mental health disorders (maternal mental health), Infectious Diseases Surveillance, and One Health.

Sana Hasan is a doctoral student in Public Health at East Tennessee State University at the Department of Health Services Management and Policy. Her career has been focused on the full spectrum of public health disciplines, including designing and implementing healthcare service delivery standards/policies, quality assurance frameworks, hospital surveyor's guides, and performance assessment tools. She has been working with prevention frameworks that include strategies to address public health problems, such as influencing policy, mobilizing communities, and educating providers.

Praveen Fernandopulle is a psychiatrist at the Department of Veterans Affairs, specializing in substance use disorders and post-traumatic stress disorders. A U.S. Air Force veteran who served in Iraq, he is dedicated to supporting his fellow veterans. His research primarily investigates the intersections of mental health and social connectedness in veterans experiencing opioid use disorder.