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Association of Mental Disorders and Cardiovascular Diseases in Middle and Older-Aged Individuals in Northeastern Iran

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ABSTRACT

Introduction: The potential link between mental disorders and cardiovascular diseases (CVD) in middle-aged and older individuals remains understudied. This study aimed to investigate the association of mental disorders and other factors with CVD among individuals aged 50 years and above in Northeastern Iran.

Methods and Materials: This population-based cross-sectional study included 137,698 participants aged ≥50 years visiting healthcare centers affiliated with Mashhad University of Medical Sciences from March 2016 to December 2023. Data were obtained from the Sina Electronic Health Record system. The International Classification of Diseases, 10th Revision (ICD-10) diagnosed mental disorders and CVD. Logistic regression analysis was performed to identify CVD-related factors, adjusting for sociodemographic variables. The final multivariate model included candidate predictor variables with $p = 0.25$ in bivariate analyses. The adjusted odds ratio and 95% confidence intervals were calculated, with $p = 0.05$ defining statistical significance. All data management and analyses were performed using Stata version 14.

Result: The prevalence of CVD was 5.3% (7,337/137,698). Compared to participants without CVD, those with CVD had a significantly higher proportion of older age (≥70 years: 41.8% vs. 25.5%), male sex (40.9% vs. 37.3%), unmarried status (23.9% vs. 21.0%), unemployment (15.9% vs. 17.6%), and lower educational attainment ($p = 0.001$ for all). Moreover, participants with CVD exhibited elevated body mass index, increased diabetes prevalence, higher metropolitan residency, and a more significant burden of mental disorders, hypercholesterolemia, and hypertension ($p = 0.001$ for all). However, the proportion of smokers and drug abusers was lower among those with CVD ($p = 0.001$). After adjusting for covariates, mental disorders (OR: 1.27), advanced age ≥70 years (OR: 2.19), obesity class I (OR: 1.31), chronic kidney disease (OR: 1.38), diabetes mellitus (OR 1.38), hypertension (OR 2.45), and hypercholesterolemia (OR: 1.13) remained significantly associated with higher odds of CVD ($p = 0.001$ for all). Conversely, female sex (adjusted OR: 0.78) and suburban residency (adjusted OR: 0.90) were associated with lower odds of CVD ($p = 0.05$).

Conclusion and Discussion: This study demonstrates that several factors are significantly associated with cardiovascular disease among the participants. Older age, mental disorders, obesity, chronic kidney disease, diabetes, hypertension, and hypercholesterolemia were all found to be positively associated with higher odds of CVD. On the other hand, being female and living in suburban areas were associated with lower odds of CVD. These findings highlight the importance of addressing these risk factors in order to prevent and manage cardiovascular disease in the population. Further research is needed to explore potential interventions targeting these risk factors to reduce the burden of CVD.

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