

## Abstract

# Association of Unhealthy Lifestyle Score on the Risk of Hypertension, Dyslipidemia, and Their Comorbidity in Korea: A Cross-Sectional Study <sup>†</sup>

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**Abstract:** Background and objectives: There is increasing evidence suggesting that lifestyle factors play a significant role in the development of hypertension and dyslipidemia. Rather than occurring individually, these conditions often coexist. Therefore, the aim of this study was to investigate the individual and combined effects of lifestyle factors on the risk of hypertension only, dyslipidemia only, and their comorbidity. Methods: This study included 9608 adults aged 19 years and above from the cross-sectional Korean National Health Examination Study between 2019 and 2021. An unhealthy lifestyle score was derived from five factors: smoking, alcohol consumption, body mass index (BMI), diet, and physical activity. Each participant was assigned an unhealthy lifestyle score based on the cumulative number of unhealthy factors present. A logistic regression model and multinomial logistic regression were used to estimate odds ratios (ORs) with 95% confidence intervals (95% CIs) after adjusting for confounders. The analysis aimed to assess the association between an unhealthy lifestyle and the risk of hypertension, dyslipidemia, and their comorbidity. Results: The prevalence of hypertension only, dyslipidemia only, and their comorbidity was 12.9%, 19.6%, and 16.4%, respectively. In the multivariable model, higher odds of hypertension alone were significantly associated with alcohol consumption and BMI status. Dyslipidemia alone and the comorbidity of hypertension and dyslipidemia were associated with all individual lifestyle factors. When compared to individuals with the highest unhealthy lifestyle score (4–5 scores), those with the lowest score (0–1 scores) had increased ORs of 5.38 (95% CI: 3.15–9.19), 4.08 (95% CI: 2.84–5.85), and 16.0 (95% CI: 9.34–27.5) for hypertension only, dyslipidemia only, and their comorbidity, respectively. Furthermore, even after stratifying by family history, individuals with the lowest lifestyle score were still associated with hypertension, dyslipidemia, and their comorbidity compared to those with the highest lifestyle score, regardless of their family history. Conclusion: These findings demonstrate a positive association between unhealthy lifestyle factors and the risk of comorbidity of hypertension and dyslipidemia, as well as hypertension and dyslipidemia alone. Moreover, lifestyle factors may influence the risk of hypertension and dyslipidemia, even in individuals with a family history of these conditions.



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**Data Availability Statement:** The data supporting the findings of this study are available at the KNHANES repository, <https://knhanes.kdca.go.kr/knhanes/main.do> (accessed on 2 February 2024).

**Conflicts of Interest:** The authors declare that they have no competing financial interests or personal relationships that could have influenced the work reported in this paper.

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