

6th International Conference on

GREEN ENERGY AND EXPO

August 29-31, 2018 | Toronto, Canada

Traffic-related noise impact on hypertension and cardiovascular health in residents living near busy roads in Kuwait

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Urban areas of the Gulf Cooperation Council (GCC) nations have grown rapidly over the last 2-3 decades. Road traffic noise characterizes a recurrent, unavoidable and nonstop collective environmental factor. Approach: 3,000 persons (30–60 years of age) who had lived at least 5 years near Kuwait airport were selected. A standardized questionnaire on annoyance, noise disturbance, and major confounders was designed. Cortisol in saliva was collected in a subsample of the study population ($n = 500$) stratified by noise exposure level. The study established significantly higher risks for road traffic noise annoyance and interference with numerous activities in the exposed group. Stratified analysis for noise annoyance levels in the total and then in exposed and non exposed samples presented marginal, no significant association between noise annoyance in the total sample for diastolic BP and for cardiovascular risk score. The marginal association was found in the exposed sample between noise annoyance and systolic BP. The subjective response was determined by a validated noise annoyance questionnaire. The ten-year risk of developing a coronary heart disease event was quantified as an evaluation of cardiovascular risk (SCORE60, Framingham 10-year risk estimation, and projection to the age of 60, relative risk SCORE chart). Cardiovascular risk scores were significantly higher in the exposed group based on the Framingham scores projected to the age of 60, SCORE60 (AOR = 2.72 (95% CI = 1.21–6.15)) and the relative risk SCORE chart (AOR = 2.81 (1.46–5.41)).

Biography

Nayef Al-Mutairi is a Professor at the Kuwait University, Khaldyah, Kuwait. He serves on the editorial board of the International Journal of Environmental Engineering Science (IJEES) and is a member of the editorial advisory board of Journal of Pollution Effects and Control (JPEC). He received the Best Scientific Engineering Production Research Award from the Kuwait Foundation for the Advancement of Sciences (KFAS) in 2011. He holds a Doctorate in Environmental Engineering from the University of Colorado, Boulder, USA. He has been doing research on environmental air with a major research focus on urban transportation addressing various mitigation and application of an advanced decision-making tools to environmental management.

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