Levels of environmental noise and perceived health implications in bus termini in Nairobi city county, Kenya

Abstract.

Background: Environmental noise remain a leading public health concern globally due to its prevalence especially with industrialization. Environmental noise is an increasing risk factor for hearing impairment and other health-related risks particularly in low and middle income countries. Regardless, lack of legislative intervention, noise surveillance, and paucity of research means environmental noise remains neglected in many developing countries. Purpose: This study aimed to establish the levels of environmental noise and perceive health implications in bus termini in Nairobi City County, Kenya. Methods: A cross-sectional study comprising 422 respondents randomly selected across gazetted bus termini within Nairobi central business district was done. Noise levels were measured using Calibrated sound level meter (Model # 8926). A self-administered semi-structured questionnaire was used to assess safety practices and perceived health risks of environmental noise. Association between noise levels and reported health implications was explored using Chi-square test of independence. Results: High noise levels were recorded across all the bus termini with the maximum (118.44dB) recorded at Moi Lane. The mean sound pressure levels varied across time with the highest (98.65dB) recorded in the evenings. On exploring the health effects of excessive noise, an equal number of male and female (M30, F30) respondents visited the doctor due to the hearing problem as well as headache and speech interference perceived to have been caused by excessive noise exposure. It was further observed that a significant association existed between number of days spent at the bus termini per week and visiting a doctor for a noise induced hearing problem ($\chi 2 = 6.113$, df=1; $p<0.04$). There was a significant association ($\chi 2=27.663$; df=8; $p>0.001$) between a respondent visiting a doctor for a noise induced hearing problem and bus termini in which they operated. Conclusion: Noise levels in the studied termini exceeded regulatory limits. Environmental noise was associated with auditory and non-auditory effects among respondents. Noise surveillance, public education and deconcentration of bus termini is recommended.

Authors:

Caleb Kogutu Nyaranga, Nyamari Jackim, Akunga Daniel, Amulla Walter