

THE ROLE OF NON-ACOUSTICAL FACTORS IN NOISE ANNOYANCE OF URBAN POPULATION

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Background and Aims: Noise annoyance is influenced by acoustical factors, such as type of noise, noise levels and frequency, and non-acoustical factors, including physiological, psychological and social factors. The aim of this study was to assess the role of some non-acoustical factors in noise annoyance of urban population.

Methods: A cross-sectional study was performed on 1311 adults (452 men and 679 women), aged 42 ± 16 years, residing in noisy urban areas in Belgrade for more than one year. Non-acoustical factors, such as socio-economic status (family income, education and employment) and dwelling characteristics (apartment size, floor level, orientation of windows) were estimated using a questionnaire. Noise annoyance was estimated using self-reported 5-graded verbal annoyance scale. Based on their annoyance level, participants were divided into two groups: highly annoyed (high level of noise annoyance) and less annoyed (low to moderate level of annoyance).

Results: Highly annoyed participants were more likely to be females, married with children and to have higher family income. Educational level and employment were similarly distributed among highly annoyed and less annoyed subjects. Highly annoyed participants were more likely to be living on lower floor levels (on the ground floor, basement or first floor), for a longer period of time, to spend more time indoors, and to have windows of their bedrooms facing the street. Orientation of windows toward the street was the most important predictor of noise annoyance ($B=2.690$, 95% Confidence Interval $=1.796-4.029$), followed by the living on the groundfloor or first floor ($B=1.448$, 95% CI $=1.134-1.851$), independently from age, gender and noise exposure.

Conclusions: Our study identified several non-acoustical factors as indicators of noise annoyance, independent from age, gender and noise exposure, primarily some dwelling characteristics and time spent indoors. Socio-economic status was not related with noise annoyance, when all the relevant parameters were taken into account.

References:

Jakovljevic B, Paunovic K, Belojevic G. Road-traffic noise and factors influencing noise annoyance in an urban population. *Environ Int*, 2009 Apr;35(3):552-6.

Paunovic K, Jakovljevic B, Belojevic G. Predictors of noise annoyance in noisy and quiet urban streets. *Sci Total Environ*, 2009 Jun;407(12):3707-11.