Relationship between noise annoyance from road traffic noise and cardiovascular diseases: a meta-analysis.

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Abstract
Road traffic noise is an important source of noise annoyance in the community. We performed a meta-analysis to assess whether there is an association between noise annoyance from road traffic noise and cardiovascular diseases (arterial hypertension and ischemic heart disease) in adult population. The meta-analysis included studies that: a. had noise annoyance as exposure, quantified either as "annoyed versus non-annoyed" or with various scales collected by standardized questionnaires; b. arterial hypertension or ischemic heart disease as outcome; c. had included only adult population (age >18 years); d. the studies had to have as effect size odds ratios or relative risk. From the individual studies those odds ratios were selected for meta-analysis which compared most distant categories. Eight studies that fulfilled criteria published between 1992 and 2006 were included in the meta-analysis: 6 studies had a cross-sectional design, 1 study had a case-control-design and 1 study had a cohort design. Increased annoyance was significantly associated with arterial hypertension (pooled risk estimate = 1.16, 95% confidence interval 1.02-1.29) while the association with ischemic heart disease did not reach statistical significance (pooled risk estimate = 1.07, 95% confidence interval 0.99-1.14). No publication bias was evidenced. The results of this meta-analysis demonstrated the existence of a positive and significant association between noise annoyance from road traffic and the risk of arterial hypertension and a positive yet insignificant association between noise annoyance and the risk of ischemic heart disease.


Publication Types, MeSH Terms

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