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The effects of annoyance due to aircraft noise on psychological distress: Results of the DEBATS study in France

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Background

Many studies have evidenced **adverse effects of exposure to aircraft noise on health**: altered cognitive performance, annoyance, sleep disturbance, hypertension and cardiovascular diseases [1]–[5].

Some studies support the hypothesis that psychological aspects such as noise annoyance play an important role in the association between environmental noise and adverse effects on health [6].

The effects of annoyance due to aircraft noise on psychological distress have rarely been evaluated. No study has been carried out in France [7].

Methods

Study Population

1,244 participants living in the vicinity of Paris-Charles-de-Gaulle, Lyon-Saint-Exupéry and Toulouse-Blagnac airports in 2013.



Outcome variables: psychological distress

Face-to-face interviews at the place of residence of the participants.

➤ Psychological ill-health:

The 12-item version of the General Health Questionnaire (GHQ-12)

➤ Feeling of depression:

“During the past 12 months, did you feel sad or depressed ?”

⇒ Extremely/very versus moderately/slightly/not at all

Factor of interest: annoyance due to aircraft noise

“Thinking about the last 12 months, when you are at home, how much does aircraft noise annoy you?”

⇒ Extremely, very, moderately, slightly or not at all ?

Statistical Analysis

GHQ-score dichotomized with a 2/3 threshold on a bimodal scale.

Logistic regression models adjusted for age, gender, occupational activity, native country, alcohol consumption, smoking habits, sleep duration, number of stressful life events, education, income, and antidepressant use.

References

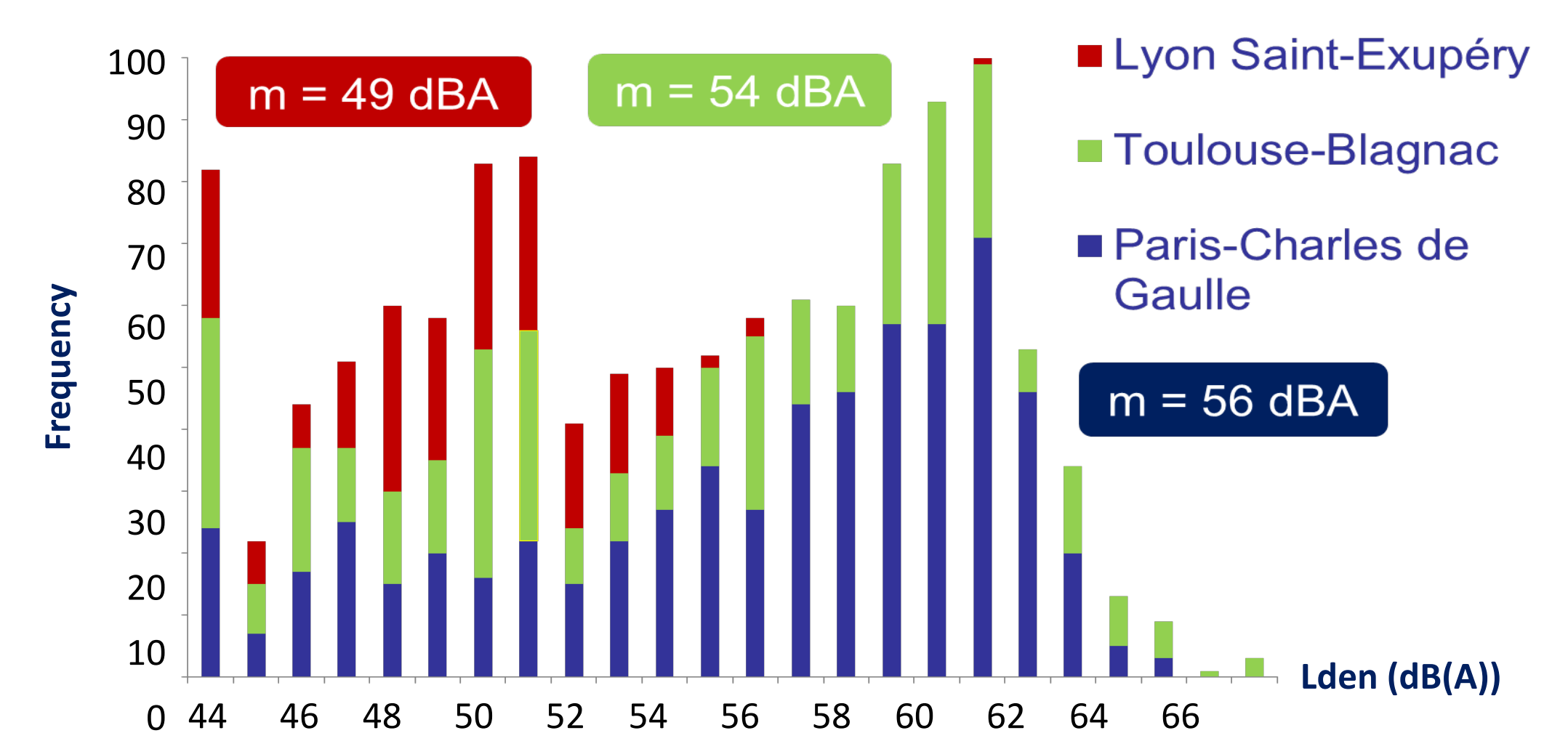
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Objectives

One of the objectives of the DEBATS study (Discussion on the health effects of aircraft noise) was **to investigate the association between annoyance due to aircraft noise and psychological distress** among people living in the vicinity of airports in France.

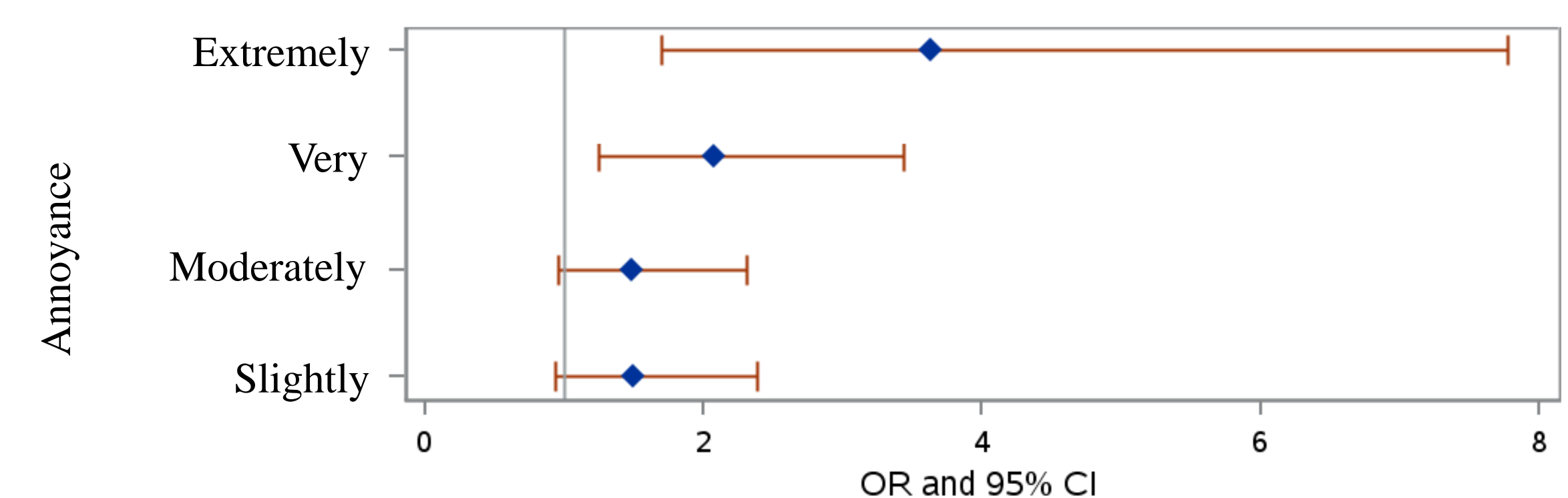
Results

Distribution of aircraft noise exposure in the three airports

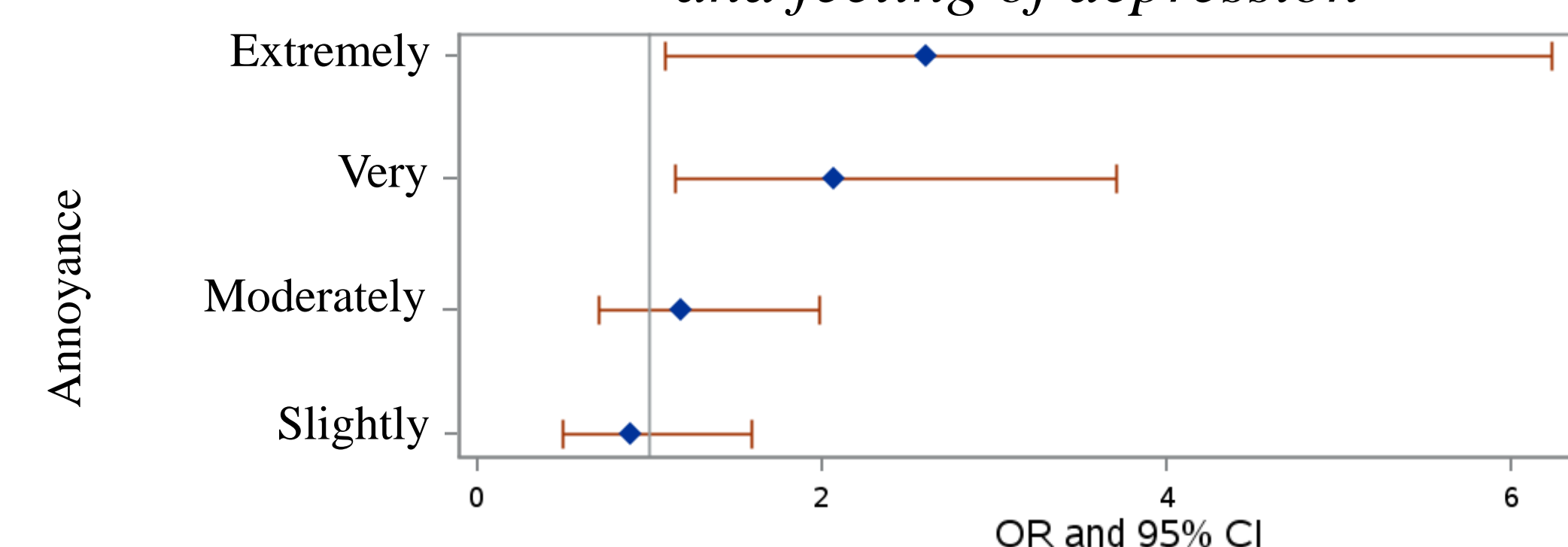


Psychological distress was significantly associated with annoyance due to aircraft noise

Odds ratios (ORs) for the association between aircraft noise annoyance and psychological ill-health (GHQ-12)



Odds ratios (ORs) for the association between aircraft noise annoyance and feeling of depression



Conclusions

The present study suggests that **annoyance due to aircraft noise is significantly associated with psychological distress**, both evaluated with a single question on feeling of depression, and with a validated questionnaire (GHQ-12). It confirms the findings of *van Kamp et al.* [7].

However, the direction of the association can be questioned: extremely annoyed people might be more at risk to have psychological distress, or people with psychological distress might be more at risk to be annoyed.

Residual confounding or declaration bias cannot be excluded in the present study. Further studies are necessary in order to explain these results.

Acknowledgments

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