

CURRENT ECOLOGICAL AND HEALTH PROBLEMS OF THE AIR TRANSPORT IN BULGARIA

Jeni Staykova¹, Tanya Turnovska², Tonko Petkov³

Hygiene Epidemiologic Inspectorate – Kardjali¹, Medical University – Plovdiv², Air
Transport Institute – Sofia³

In a large number of studies are emphasized, that the aircraft traffic has reflected negatively over the habitants' health living near to the airport complexes. Among the multi-effects of the harmful influence, most aggressive is the noise influence. It considers that as a very strong factor of stressogen, it is ethiologically concerned with reducing of the unspecific resistance of the constitution, with increased risk of mental disorders and diseases, blood-vascular, digestion systems etc. Systematically disturbing of the calmness and sleep are aggravated elements into the vice circle of the pathological processes.

The forthcoming admit of Bulgaria in the European Union will lead to intensification of the air traffic, which will force enlargement not only of the function, but also and to the base of the airports in Bulgaria. The objecting of their influence over the living surroundings and health of the population living near is a preposition for right governing decisions, connected with further development of the airport complexes. With the present study we put an **AIM** to analyse the health status of the population living close to three of the most loaded up airports in Bulgaria – Sofia (the capital of Bulgaria, with **1 178 579** habitants), Varna (the biggest Black sea resort in the country with **461 174** habitants and Bourgas (seaside resort with **422 458** habitants). **MATERIALS AND METHODS:** It is examined the ambulatory polyclinic morbidity rate (among children 0 – 17 years old – prevalence) and adults (17+ years old – incidence) by calls for medical help about the base forms, some groups diseases and nozological items (ICD – IX Revision), which by literature data are in a reason connection with the noise influence. We have analyzed the same kinds of data for comparing in the regions and areas, which are most favourable placed according to the airport and the directions of the aircraft traffic for the relevant town. The statistical processing is made with a help of non-parametric analysis – χ^2 – criterion. **RESULTS:** It was found significant and authentic higher morbidity rate among the population living near to the airport complexes in the three towns in compare with the population from the controlled regions by number of diseases: Children – Total diseases (%): 3613.00 – Bourgas; 3450.24 – Varna 3081.58 – Sofia, the while morbidity rate among children living in the distant areas is between 1327.52

and 2506.76. Adults - Total diseases (%): 1376.56 – Bourgas; 1207.23 – Sofia; 903.93 – Varna, as long as morbidity rate among the adults living in the controlled areas is between 398.89 and 569.49. The differences are characterized with high level of significance. The same results were found about “Diseases of the nervous system and the sense organs”, “Mental disorders”, “Diseases of the blood circulatory organs” including hypertonicity, “Diseases of the digestive system” and others – Fig. 1,2,3,4. **CONCLUSION:** The function of the airport complexes in the towns of Sofia, Varna and Bourgas affects negative impact over the health status of the habitants which lives close to them. For improving of the condition is necessary the realizing of a complex of measures sanitary-technical, organizational and health-preventing, and exactly :

1. In the forthcoming reconstructions of the airports, the distance between the tracks and housing complexes should be extended in maximum level, and the existing tracks will be moved up in a proper direction, and new ones will be builded according to the requirements of the hygiene-protecting area. It is reasonable the hygiene-protecting areas to be dynamic, after obstacles change they should be corrected too;

2. To ensure funding of measures for collective health defence against impacting aircraft noise into the houses;

3. To create the base for the normative reducing of the flights over the relevant towns;

4. To organize a monitoring of the real noise levels in taking off and landing of the airplanes, and a possibility for operative actions and punishments for the violators etc.;

5. To analyse periodically the health status of the population living closest to the airport complexe, using the percise health indicators.

REFERENCES

Report of a Field Study of Aircraft Noise and Sleep Disturbance: A study commissioned by the Department of Transport from the Department of Safety, Environment and Engineering, Civil Aviation Authority December 1992.

Stansfeld, S., M. Haines, S. Brentnall, J. Head, R. Roberts, B. Berry, M. Jiggins: West London Schools Study. Aircraft noise at school and children’s cognitive performance and stress responses; Final report, 2000, Department of Health and the Department of the Environment, Transport and the regions.

Stansfeld, SA, MM Haines, M. Burr, B. Berry, P. Lercher: A review of environmental noise and mental health; Noise & Health, 2000, 8, 1-8.

Smith A, Holmsen E. Public health work in connection with a new international airport. *Tidsskr Nor Laegeforen* 1998;30;118(23):3656-3658.

Hatfield J, Job RF, Hede AJ, Carter NL, Peploe P, Taylor R, Morrell S. Human response to environmental noise: the role of perceived control. *Int J Behav Med* 2002;9(4):341-59.

Hygge S, Evans GW, Bullinger M. A prospective study of some effects of aircraft noise on cognitive performance in schoolchildren. *Psychol Sci* 2002;13(5):469-74.

Fig.3 Diseases of blood circulatory organs among children

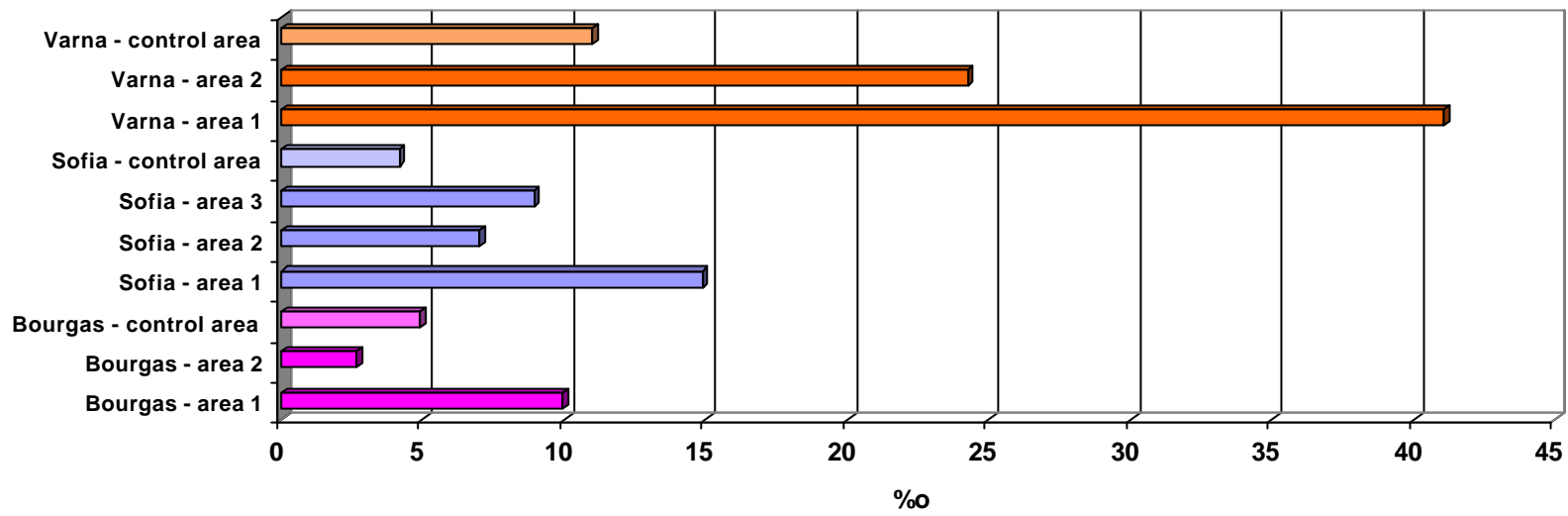


Fig. 4 Diseases of blood circulatory organs among adults

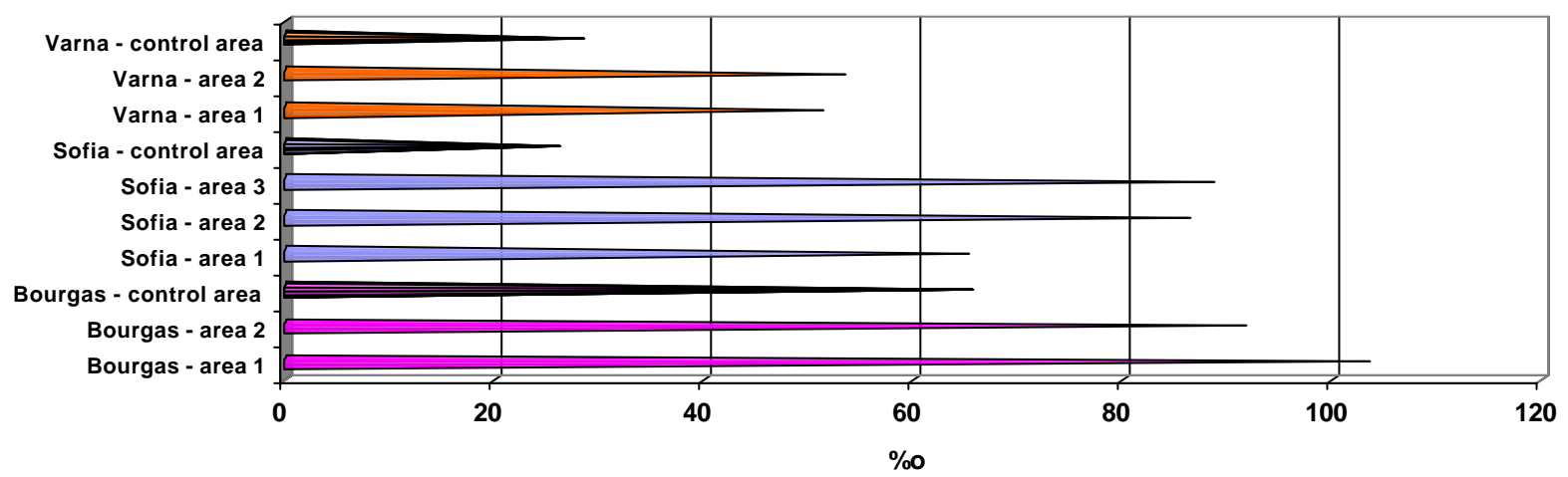


Fig.1 Diseases of nervous system and sense organs among children

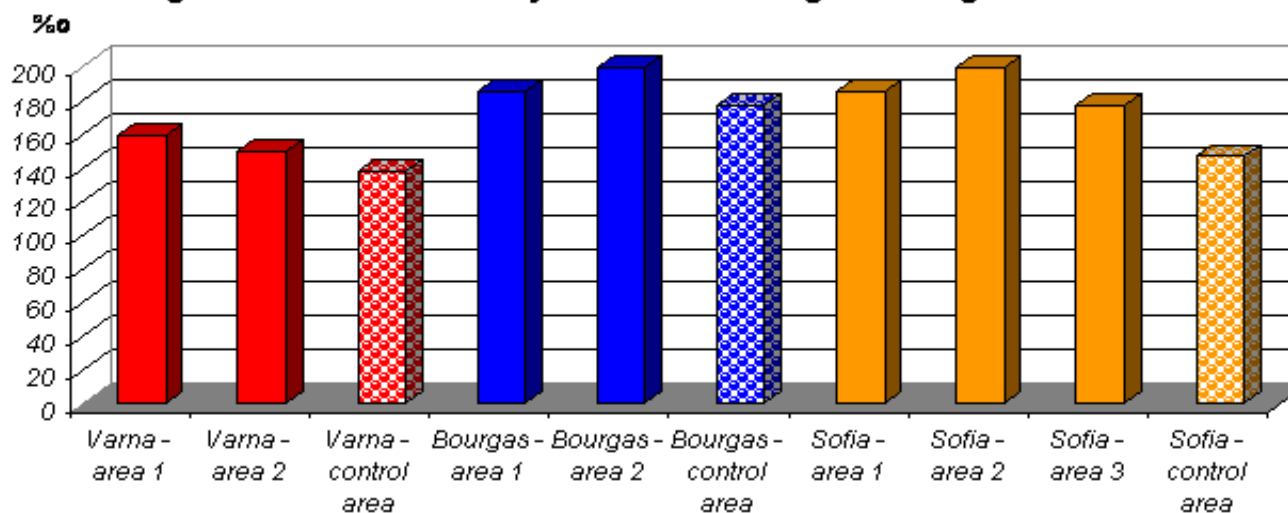


Fig.2 Diseases of nervous system and sense organs among adults

