

EFFECT OF A SEWAGE TREATMENT PLANT ON THE RESPIRATORY SYSTEM OF NEARBY RESIDENTS

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Sewage treatment plants belong to high risk facilities in terms of biological and chemical pollutants released into the environment. The pollutants pose a particular threat to the employees and the residents of the surrounding areas. The aim of this study was to evaluate the impact of a sewage treatment plant on the respiratory system of the local inhabitants and to check the relationship between the reported symptoms and the distance from the plant. We conducted questionnaire surveys on two populations - one from the vicinity of the nearby sewage treatment plant and another from a village located far away from the plant, thus constituting the unexposed (control) population. For the purpose of the surveys we randomly selected 1094 people according to the calculated sample sizes: 590 people from the exposed group and 504 people from the control group. The exposed group was divided into zones (internal division) as a function of distance from the sewage treatment plant, according to the list of addresses (zones: A and B), whereas zone C was the control group. The questionnaire included questions concerning characteristic symptoms, respiratory diseases, and housing conditions (confounding factors; internal). Respondents from the area of exposure reported the following symptoms significantly more often than the control group: frequent colds, recurrent respiratory tract infections, throat irritation, dyspnoea, recurrent rhinitis, and nose irritation/burning sensation. In the exposed group the incidence of respiratory diseases was higher among children than adults. Among the analysed risk factors, the most significant one was the impact of the proximity of the sewage treatment plant on the health of the inhabitants. The study demonstrated the existence of a relationship between the reported respiratory symptoms and the distance from the plant (as the distance increased, the frequency of the declared respiratory diseases decreased). The results of our studies show that proximity to a sewage treatment plant significantly deteriorates health of the local residents.