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Title: Respiratory symptoms, lung function tests, and sensitization to work-related allergens in female cleaners

Dr. Dragan 31748 Mijakoski dmijakoski@yahoo.com MD ¹, Prof. Dr Jovanka 31749 Karadzinska-Bislimovska bislimovska_j@yahoo.com MD ², Dr. Sasho 31750 Stoleski sstoleski@yahoo.com MD ², Prof. Dr Jordan 31751 Minov minovj@hotmail.com MD ² and Dr. Mimoza 31752 Marsenic dmijakoski@hotmail.com MD ¹. ¹ Allergy Center, Institute for Occupational Health of RM, WHO CC and GA2LEN CC, Skopje, Macedonia, The Former Yugoslav Republic of, 1000 and ² Dpt for Functional Respiratory Diagnostics, Institute for Occupational Health of RM, WHO CC and GA2LEN CC, Skopje, Macedonia, The Former Yugoslav Republic of, 1000 .

Body: Objective. To assess occurrence of respiratory symptoms, lung function impairment, and sensitization to work-related allergens among female cleaners. Methods. We performed a cross-sectional study including 50 female cleaners (mean age 40.3±7.9 years, mean job duration 14.3±8.3 years). In addition, 50 female office workers (mean age 41.9±9.6 years, mean job duration 15.9±7.3 years) were examined as a control. Evaluation of examined subjects included completion of a questionnaire on respiratory symptoms in the last 12 months, lung function testing, histamine challenge test (PC20 ≤ 8 mg/mL), and patch testing to work-related allergens. Results. Compared with office workers, cleaners had more frequently respiratory symptoms (cough, phlegm, wheezing, and shortness of breath) in the last 12 months (36.0% vs. 16.0%, P < 0.05). Also, the difference was statistically significant for cough (38.0% vs. 14.0%, P < 0.05), and shortness of breath (40.0% vs. 18.0%, P < 0.05). Lung function testing showed lower parameters in cleaners with significant difference for MEF25 (P < 0.025) and MEF50 (P < 0.05). Significant association was registered between respiratory symptoms and BHR in both cleaners and office workers (P < 0.05). Prevalence of BHR was higher in cleaners with significantly higher severity (P < 0.05). Patch testing to balsam of Peru, colophony, formaldehyde, lanolin, and parabens was positive in 11.1%, 16.7%, 16.7%, 22.2%, and 22.2%% of all cleaners reporting respiratory symptoms, respectively. Conclusion. Our data emphasize of specific occupational hazards in the development of respiratory symptoms, lung function impairment, and sensitization to work-related allergens in cleaners.