Title: Respiratory symptoms and lung function tests among the goldsmith engaged in jewellery manufacturing industries in India

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Body: Introduction: The goldsmiths are exposed to various acidic and metallic fumes at work. But no study has been reported on goldsmiths neither on the Indian jewellery industries evaluating the relationship between occupational exposure and respiratory health. Aim: The study was carried out to see if there is a cause and effect relationship between the exposure to metallic and acidic fumes and respiratory health effects among workers engaged in Indian jewellery manufacturing industries. Methods: 134 males participated in the study among which 100 were the industry workers (mean age 34±4.2 years) and 34 were front desk office executives (mean age 37±5.2) of the same industry. Evaluation of examined subjects included completion of a standardized questionnaire on respiratory symptoms and spirometry. Data were analyzed using odds ratio with 95% confidence interval and logistic regression adjusting for age, smoking status, second hand smoke exposure and parental atopy/asthma. Results: The goldsmiths had significantly higher prevalence of chronic cough (OR = 3.5, 95% CI = 1.2-8.2), nasal allergy (OR = 2.9, 95% CI = 1.1-4.8), production of phlegm (OR = 3.2, 95% CI = 1.4-6.2) and tightness in chest (OR = 2.7, 95% CI = 1.7-4.7) compared to the office workers. Results of spirometry showed significantly lower percent predicted values of FVC (p< 0.05), FEV1 (p< 0.001), FEV1/FVC (p< 0.01) and FEF25-75 (p< 0.001). Conclusion: Due to exposure to various sensitizers and irritants (metallic and acidic fumes) in the workplace the goldsmiths had higher prevalence of respiratory disturbances and a reduced lung functions compared to the front office staffs.