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**Title:** Troller fuel exhaust and respiratory impairments; a cross sectional study in Indian fishermen

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**Body:** Introduction: The fishermen of India are exposed regularly to the fuel exhausts of the trollers. No study has been reported on the respiratory health of the fishermen. Aim: The study aimed to see whether there is a relationship between troller fuel exhaust and respiratory impairments among the fishermen in India. Methods: A total of 259 male fishermen participated in the study among which 152 were regularly exposed to troller fuel exhaust (mean age  $58 \pm 9.8$  years) and 107 were never exposed to that (mean age  $53 \pm 10.3$  years). Evaluation of the examined subjects included ECRHS questionnaire for the assessment of respiratory symptoms and lung function test. Data were analysed using odds ratio with 95% confidence interval and independent 't' test adjusting for age, smoking status, parental asthma and second hand smoke exposure at home or work. Results: Fishermen exposed to troller fuel exhaust had higher prevalence of respiratory symptoms for chronic phlegm (OR = 3.4, 95% CI = 1.2-8.3), morning cough with sputum (OR = 2.3, 95% CI = 1.1-4.6), prolonged cough (OR = 2.5, 95% CI = 1.4-6.2), whistling in chest (OR = 2.8, 95% CI = 1.4 = 7.3) and breathing trouble (OR = 2.6, 95% CI = 1.2-6.2) compared to the those unexposed to troller fuel exhaust. Spirometric parameters showed that the mean values of FVC, FEV<sub>1</sub>, FEV<sub>1</sub>/FVC, FEF<sub>25</sub>%, FEF<sub>50</sub>%, FEF<sub>75</sub>% and FEF<sub>25-75</sub>% were lower in the subjects exposed to fuel exhausts but statistically significance ( $p < 0.01$ ) was observed for FEF<sub>25</sub>%, FEF<sub>50</sub>%, FEF<sub>75</sub>% and FEF<sub>25-75</sub>%. Conclusion: The study suggests that occupational exposure to troller fuel exhaust is associated with higher prevalence of respiratory symptoms and lung function impairment among fishermen of India.