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| **Thesis Title** | The association between particulate matter 10 and severity of chronic obstructive pulmonary disease, Chiang Rai Province, in 2011-2012 |
| **Author** | Peeyawan Pramuansup |
| **Degree** | Master of Science (Public Health) |
| **Advisor** | Dr. Phairoj Jantaramanee |
| **Co-Advisor** | Dr. Nittaya Pasukphun |
| | Dr. Monchai Wongkarnka |

# ABSTRACT

This research determines the association between particulate matter with ≤ 10 $\mu/m^3$($PM_{10}$) and the severity of Chronic Obstructive Pulmonary Disease (COPD). A retrospective cohort study design was conducted and collected data by using completed and tested questionnaires. The data were collected from the medical records among the COPD cases from 5 local hospitals in Chiang Rai Province, Thailand: Mae Chan, Mae Sai, Prayameng Rai, Sodejprayanasungwon, and Chiang San Hospitals. The $PM_{10}$ was calculated by the setting of $PM_{10}$ monitoring system in Chiang Rai Province. The severity was measured by the Modified Medical Research Council Dyspnea Score (mMRC) method. Logistic regression model was applied to test the association between independent variables and dependent variable. The determinations of statistical significance levels were 0.10 and 0.05 in the univariate and multivariate models respectively.

The different $PM_{10}$ exposing level was found in the group for exposure to $PM_{10}$ ($p>0.05$) in dry season. Multiple logistic regression analysis was found that those people who exposed $PM_{10}$ would increasing to be resulted in severity of COPD with 6.03 times when compare to un-exposed period, OR= 6.03 (95% CI: 4.13-8.63). Increasing of $PM_{10}$ level is directly associated with the severity of the COPD. Increasing of people awareness to avoid and protect from the $PM_{10}$ are necessary for increasing quality of life among the COPD.

**Keywords:** COPD/ $PM_{10}$/ Severity of COPD