# Pajanan $NO_2$ Bulan Pertama dan Kedua Kehamilan terhadap Bayi dengan Berat Badan Lahir Rendah

## Exposure to $NO_2$ at First and Second Month of Pregnancy in Baby with Low Birth Weight

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**Abstrak**

Pajanan pencemar udara selama kehamilan berhubungan dengan bayi be-rat badan lahir rendah (BBLR). Untuk menghubungkan konsentrasi $NO_2$ dalam udara ambien, telah dilakukan studi ekologi di Jakarta. Konsentrasi $NO_2$ didapat dari data monitoring BPLHD DKI Jakarta 2009 – 2011, sedan-gkan kasus-kasus bayi BBLR diperoleh dari Dinas Kesehatan Provinsi DKI Jakarta. Data dianalisis dengan Anova, uji korelasi, dan regresi linier dan berganda. Hasil analisis menunjukkan bahwa konsentrasi $NO_2$ dalam bulan pertama dan kedua kehamilan berhubungan bermakna dengan BBLR (masing-masing dengan R = 0,464, nilai p = 0,0001 dan R = 0,243, nilai p = 0,013). Regresi linier berganda menunjukkan bahwa konsentrasi $NO_2$ dapat meramalkan 25% kasus BBLR (R = 0,5; $R_2$ = 0,25; nilai p = 0,0001). Variabel yang paling memengaruhi BBLR adalah pajanan ter-hadap $NO_2$ pada bulan pertama gestasi (B = 259). Disimpulkan, pajanan $NO_2$ pada bulan pertama dan kedua kehamilan dan tempat wilayah tinggal berhubungan dengan BBLR, dengan pajanan $NO_2$ pada bulan pertama kehamilan merupakan faktor utama BBLR.

**Kata kunci**: Berat badan lahir rendah, gestasi, kehamilan, pajanan $NO_2$, udara ambien

**Abstract**

It has been known that exposure to air pollutant during pregnancy was as-sociated with low birth weight. To correlate $NO_2$ concentration in ambient air with baby with low birth weight (LBW), an ecological study has been carried in Jakarta. $NO_2$ concentration was obtained from 2009 – 2011 monitoring data (Jakarta BPLHD), while low birth weight data were obtained from Jakarta Provincial Health Office. Anova, correlation, linear and multiple lin-ear regressions were employed to analyze $NO_2$ concentration with LBW. It showed that $NO_2$ concentrations during first and second month of preg-nancy were significantly correlated with the LBW (R = 0.464, p value = 0.0001 and R = 0.243, p value = 0.013). Multiple linear regression showed that the concentration of $NO_2$ in the first and second month of pregnancy can predict 25% of LBW cases (R = 0.5, $R_2$ = 0.25; p value = 0.0001). The most influence variable on LBW is exposure to $NO_2$ in the first month of ges-tation (B = 259). It is concluded that exposure to $NO_2$ in the first and second month of pregnancy and city of residence correlated with the LBW, with $NO_2$ exposure in the first month of pregnancy was the most influencing factor of the LBW.

**Keywords**: Low birth weight, gestations, pregnancy, $NO_2$ exposure, ambient air