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CONFRONTING THE PRENATAL EFFECTS OF ACTIVE AND PASSIVE TOBACCO SMOKING ON THE BIRTH WEIGHT OF CHILDREN

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SUMMARY

The purpose of the paper is to present the effects of active and passive tobacco smoking during pregnancy on the birth weight in the sample of 1165 schoolchildren covered by the health survey in Cracow. Data on main-stream tobacco smoke (MS) and side-stream tobacco smoke (SS) and the birth weight of children were collected by standardized interviews with mothers. As expected, exposure to MS tobacco smoke was the single strongest factor related to the reduced birth weight, however, the effect was statistically significant only in those respondents who confirmed the cigarette smoking over the whole pregnancy period. On the basis of multiple regression model considering child's gender, active and passive smoking during pregnancy, parity and gestational age, it was estimated that MS tobacco smoke is to reduce the birth weight on average by about 210 g, however, in heavy smokers up to 450 g. The effect of SS tobacco smoke was to reduce birth weight by about 60 g after accounting for confounders. Both effects of active and passive smoking in pregnancy were statistically significant. When the self-reported smoking status was compared with plasma cotinine levels in women at delivery, a substantial misclassification error has been disclosed and it resulted mainly from the low sensitivity (47%) of the self-reported data on smoking status. This exposure bias may lead to a significant underestimation of correlation between low birth weight (< 2500 g) and tobacco smoking of mothers in pregnancy. Odds ratio (OR) corrected to exposure misclassification was much higher than the crude one (corrected OR = 8.0, crude OR = 2.9).

Key words: tobacco smoking, prenatal effects, birth weight

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