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Association between smoking and psychosis may be mediated by maternal smoking during pregnancy

The report demonstrating a cross-sectional association between current smoking and psychotic experiences (Bhavsar *et al.*, 2017) is interesting but the authors fail to consider what I believe may be an important and plausible potential causal mechanism. Smoking during pregnancy has been shown to be a risk factor for the subsequent development of schizophrenia (Niemel *et al.*, 2016). Since similar effects are seen with maternal malnutrition and infections during pregnancy (Xu *et al.*, 2009; Khandaker *et al.*, 2013), it seems reasonable to conclude that a broad range of insults during pregnancy, including maternal smoking, may impact on neurodevelopment in a way, which increases susceptibility to subsequent psychosis. Smoking behaviour is familial, with both genetic and cultural effects (Bares *et al.*, 2016). Thus, research subjects who currently smoke are more likely to have mothers who smoked during pregnancy and this would be expected to increase their risk of schizophrenia and/or psychotic experiences. This mechanism might also explain, at least in part, the apparent genetic association between smoking behaviour and schizophrenia (Hartz *et al.*, 2017). The effect might be mediated indirectly through maternal smoking behaviour, which would lead to the observation that genetic variants associated with smoking (in the mother) were also associated with schizophrenia (in the offspring).

Of course, the mechanism I propose does not explain the observed association between smoking and schizophrenia in discordant monozygotic twins (Lyons *et al.*, 2002), nor the correlation in individuals between smoking behaviour and psychotic experiences over time (Taylor *et al.*, 2014). Nevertheless the effect of maternal smoking does seem to be potentially relevant and worthy of consideration in studies of this nature.

Declaration of Interest

The author declares he has no conflict of interest.

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