



Invited commentary

Small numbers are not predictive: Congenital blindness may or may not be protective for schizophrenia



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To the Editor,

We recently read the informative paper “Congenital blindness is protective for schizophrenia and other psychotic illness. A whole-population study” (Morgan et al., 2018). The authors investigated a whole population cohort of 467,945 children born in Western Australia, of which 0.4% were identified as individuals who developed schizophrenia in the tested time. Sixty-six of this cohort were born with cortical blindness. None of these 66 individuals were identified with schizophrenia. The authors concluded that “congenital/early cortical blindness ... is protective against schizophrenia.” We suggest to carefully re-examine this conclusion, based on statistical reasoning.

We applaud the use of a whole population sample. However, we maintain that the small number of individuals in the target population (66) cannot lead to any conclusions on the relationship between cortical blindness and schizophrenia in the population at large. The ratio of children who developed schizophrenia in the tested time was 0.4%. In other words, one out of 250 individuals on average. With this ratio in mind, the expected number of children with cortical blindness who develop schizophrenia in a sample of 66 is 0.26 child. Since humans are counted as whole units, the expected number should be zero, as indeed reported, nullifying the authors' conclusion.

The authors note that “there may have been some under-ascertainment of schizophrenia” due to technical reasons, and that “it is likely that, as the cohort ages, more incident cases of schizophrenia will arise”. Consider the following scenario: one of the individuals with cortical blindness out of the 66 develops schizophrenia in the

next year, or his/her schizophrenia appears not to be detected by the means used in the study. Now, the prevalence of individuals with cortical blindness who develop schizophrenia in the population is 1.5%, almost four times higher than expected. This could lead to the erroneous conclusion that cortical blindness is a risk factor for schizophrenia.

In sum, we echo the warning of using small numbers by Rao and Molina (2015), and maintain that the results of the study cannot support or refute any link (positive or negative) between cortical blindness and schizophrenia.

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