Reply to: "Letter to the Editor: Cocaine use and cocaine use disorder - Revisiting epidemiology and clinical impact"

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We thank professor Singh for the letter and the interest in our work (Singh, in press). The request of clarifications allows to provide the readers with more details on the methods and the results of our meta-analysis. Due to the low number of included studies, subgroup comparisons were not considered reliable, and we instead conducted leave-one-out analysis to identify possible distortions of the pooled estimates. We provide here the details requested and the results of subgroup analyses.

The Egger's linear regression test for assessing publication bias (Egger et al., 1997) did not detect funnel plot asymmetry neither in the metanalysis on prevalence of cocaine use ($p = 0.310$) nor in the metanalysis on prevalence of cocaine use disorder ($p = 0.578$). However, funnel plots examination suggested a certain skewness. After the bias correction using trim-and-fill procedure (Duval and Tweedie, 2000), the prevalence of cocaine use dropped to 21.4% (95% CI 13.5–32.2) whereas that of cocaine use disorder raised to 13.4% (95% CI 9.8–18.1).

According to risk of bias assessment conducted using the checklist developed by Munn (Munn et al., 2015) no study was graded at high risk of bias. Three studies were judged at moderate risk of bias and nine at low risk of bias. The estimated average prevalence of cocaine use was 28.4% (95% CI 17.3–42.9) for the three studies at moderate risk of bias, and 20.7% (95% CI 11.0–35.5) for the three studies at low risk of bias. The estimated average prevalence of cocaine use disorder was 10.6% (95% CI 8.9–12.6) for the two studies at moderate risk of bias, and 9.5% (95% CI 6.4–13.8) for the seven studies at low risk of bias. In both cases, the difference in the pooled prevalence between groups was not statistically significant.

Three studies were conducted on community samples and nine on clinical samples. The estimated average prevalence of cocaine use was 16.2% (95% CI 10.9–23.3) for the three studies conducted on community samples, and 35.1% (95% CI 30.2–40.4) for the three studies conducted on clinical samples. The estimated average prevalence of cocaine use disorder was 7.5% (95% CI 3.7–14.6) for the two studies conducted on community samples, and 10.6% (95% CI 7.7–14.6) for the seven studies conducted on clinical samples. For cocaine use, the pooled prevalence was significantly lower in community vs clinical samples, whilst in case of cocaine use disorder the difference in the pooled prevalence between groups was not statistically significant.

Five out of six studies provided lifetime prevalence of cocaine use. The estimated average prevalence was 28.3% (95% CI 20.6–37.5). For cocaine use disorder, seven studies provided lifetime prevalence, and two studies provided point estimates. The prevalence of cocaine use disorder was 9.1% (95% CI 7.6–10.8) for the studies providing lifetime data, and 9.8% (95% CI 2.9–28.7) for the studies providing point estimates. The difference in the pooled prevalence between groups was not statistically significant.

Four studies estimated cocaine use outcomes using Structured Clinical Interview for DSM Disorders (SCID) and six studies used other methods. In two studies the outcomes were self-reported; these have been excluded from the calculation of the following estimates. The estimated average prevalence of cocaine use was 18.7% (95% CI 7.3–40.3) for the two studies using SCID, and 23.2% (95% CI 13.3–37.2) for the two studies using other assessment tools. The estimated average prevalence of cocaine use disorder was 7.0% (95% CI 5.6–8.6) for the three studies using SCID, and 12.2% (95% CI 8.7–17.0) for the five studies using other methods. For cocaine use, the difference in the pooled prevalence was not statistically significant,

whilst in case of cocaine use disorder the pooled prevalence was significantly lower in studies using SCID vs those using other tools.

In conclusion, the pooled prevalence of cocaine use did not appear to vary according to risk of bias and kind of diagnostic tool used, whilst it was significantly lower when ADHD subjects were enrolled in community vs clinical setting. The pooled prevalence of cocaine use disorder did not vary according to risk of bias, context of enrollment, lifetime vs point estimates, but it was significantly lower in studies using SCID vs other diagnostic tools.

We hope these results will be useful for clinicians and epidemiologists. We underline however that for most subgroups the number of included studies was very low, so limiting the reliability of the estimates.

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Declaration of competing interest

All authors declare that they have no conflicts of interest.

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