Correction

CORRECTION TO: "PARAMETRIC-REGRESSION–BASED CAUSAL MEDIATION ANALYSIS OF BINARY OUTCOMES AND BINARY MEDIATORS: MOVING BEYOND THE RARENESS OR COMMONNESS OF THE OUTCOME"

In the article "Parametric-Regression–Based Mediation Analysis of Binary Outcomes and Binary Mediators: Moving Beyond the Rareness or Commonness of the Outcome" by Samoilenko and Lefebvre (1), there were errors in the SAS macro *mediation_estimates*. These errors were identified recently while developing our R package *ExactMed* (2) and are now corrected in the new SAS macro we provided in the Web Appendix (which is an updated version of Web Appendix 3 from our original article).

We modified our SAS macro *mediation_estimates* (see code lines highlighted in the Web Appendix) to rectify calculations related to the delta method standard errors for the natural direct and total effects (NDE and TE, respectively). We also made a correction for the indirect effect (NIE), but this concerns nonbinary exposures only. These errors were introduced when generalizing our macro, which was initially developed for our specific simulation studies with binary exposures, to accommodate both binary and continuous exposures.

Please note that the aforementioned problem with the delta method standard errors does not affect the results reported in the simulation studies; in other words, the coverage probabilities of the exact delta 95% confidence intervals of Tables 2–4 in (1) remain the same because these results were obtained using an initial, correct, version of the macro. Errors were, however, introduced for the NDE and TE in the real-data example, with impact on Table 5 and Figure 1 (1).

In Table 1 below, we provide corrections for the 95% confidence intervals obtained by the exact approach using the delta method for the NDE and TE in Table 5 of (1) (see columns Corrected Estimates). As can be seen, the

corrected exact delta 95% confidence intervals for exposure variable *treatment by inhaled corticosteroids* are very close to the originally published ones, but they are significantly changed for *placental abruption*. For the left panel of Figure 1 (Figure 1A), the overall visual aspect of the figure is little changed by the corrections; for the right panel (Figure 1B), the confidence intervals for the exact NDE and TE are now in agreement with those that were presented for the R package *medflex* (3) (confidence intervals drawn with dotted lines in that figure).

In light of these errors, we advise analysts and investigators who have used our first version of the SAS macro to validate their results using the new version provided. Feel free to contact us for concerns or questions concerning this erratum.

REFERENCES

1. Samoilenko M, Lefebvre G. Parametric-regression–based causal mediation analysis of binary outcomes and binary mediators: moving beyond the rareness or commonness of the outcome. *Am J Epidemiol.* 2021;190(9):1846–1858.
2. Caubet M, Samoilenko M, Lefebvre G. ExactMed: Exact Mediation Analysis for Binary Outcomes. R package, version 0.1.0. 2022: https://cran.r-project.org/web/packages/ExactMed/index.html.
3. Steen J, Loeys T, Moerkerke B, et al. medflex: an R package for flexible mediation analysis using natural effect models. *J Stat Soft.* 2017;76(11):1–46.

Table 1. Corrections to Table 5 in "Parametric-Regression–Based Causal Mediation Analysis of Binary Outcomes and Binary Mediators: Moving Beyond the Rareness or Commonness of the Outcome" (1)

Effect Scale	Treatment by Inhaled Corticosteroids		Placental Abruption	
	Exact Delta 95% CI Estimates Before Correction	Corrected Estimates	Exact Delta 95% CI Estimates Before Correction	Corrected Estimates
NDE OR	0.86, 1.16	0.85, 1.16	1.61, 2.21	1.30, 2.72
TE OR	0.78, 1.14	0.78, 1.14	3.33, 7.73	3.70, 6.96
NDE RR	0.87, 1.15	0.86, 1.15	1.52, 2.08	1.28, 2.46
TE RR	0.80, 1.13	0.79, 1.13	2.71, 5.86	3.14, 5.07
NDE RD	−0.01, 0.01	−0.01, 0.01	0.04, 0.07	0.01, 0.09
TE RD	−0.03, 0.02	−0.02, 0.01	0.17, 0.23	0.14, 0.26

Abbreviations: CI, confidence interval; NDE, natural direct effect; OR odds ratio; RD, risk difference; RR, risk ratio; TE, total effect.