

## Letter to the Editor

# Improving the Quality of the Reporting of Systematic Reviews and Meta-analyses

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## Dear Editor,

We read with great interest an article entitled “*Prevalence of Birth Defects in Iran: A Systematic Review and Meta-Analysis*”, published in July 2017 in your valuable Journal.<sup>1</sup> Systematic reviews (SRs) and meta-analytic (MA) studies can be very effective and valuable for health-care workers and policy-makers, since they provide updated and reliable scientific evidences. Authors should be commended for their efforts; however we have the following observations. Because of methodological differences among studies (in terms, for example, of study design, sample size, different criteria or tests, study province/region, etc.) and different kinds of biases such as selection bias, attrition bias, detection bias, and performance bias, the authors could have stratified their meta-analysis based on the quality of studies.<sup>2</sup> Quality assessment is a crucial component of SRs and MA studies. Various validated tools, checklists and guidelines exist, including CONSORT, STROBE, GRADE and PRISMA. Also the assessment of publication bias is fundamental in this kind of studies,<sup>3</sup> and can be done by carrying out the Begg’s test,<sup>4</sup> or the Egger’s test.<sup>5</sup> Further, it is important to identify the main sources of heterogeneity among studies,<sup>6</sup> and carry out subgroup analyses and/or meta-regressions.<sup>7,8</sup> Moreover, it is important to investigate the effect of removing each study, which is called sensitivity analysis, to see whether and how much the results of one or more study(ies) significantly affect the final outcome(s).<sup>9</sup> This analysis explores how much reliable, robust and stable the findings of a MA study are. All these analyses make the reporting of the results of SRs and MA studies more clear, transparent and understandable in terms of the

interplay of the different variables/factors impacting on the outcome(s). In conclusion, SRs and MA studies are very valuable tools for quantitatively synthesizing health-related topics and for planning and designing further future studies, provided that the results are reported in an accurate and meaningful way.

## Conflict of Interest Disclosures


None.

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