Title: Methodological characteristics of systematic reviews of prevalence

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Background: Prevalence estimates of clinical conditions are critical for public health, since they support healthcare decisions. The number of systematic reviews of prevalence published in the literature has increased tenfold over the past decade. Even though, there is still uncertainty and lack of standards for the methodological development of these reviews.

Objectives: To describe the methodology of recently published systematic reviews of prevalence of clinical conditions.

Methods: We searched MEDLINE using the terms 'prevalence' and 'systematic review' in the title and limited the search to studies published between February 2017 and February 2018. We included systematic reviews on the prevalence of any clinical conditions published in English. We extracted relevant data regarding the methodology of the studies using a pre-designed data extraction table.

Results: Our search identified 335 systematic reviews, of which 235 were included in our study. The median number of studies included in each review was 24 (IQR 15-40). Twenty two percent of included reviews had published or registered the systematic review protocol. Reporting guidelines were used in 72% of reviews (among them, 95% used PRISMA and 16% used MOOSE). The quality of prevalence studies was assessed in 78% of reviews. Only 12 reviews assessed the overall quality of evidence (50% using GRADE). Meta-analysis was conducted in 62% of reviews; 99% of them used a random-effects model. Among the reviews with meta-analysis, 52% percent performed subgroup analysis and 41% performed meta-regression; publication bias was examined in 11% of them by visual inspection of funnel plots, and publication bias was tested in 42% (84% with Egger's test, 39% with Begg's test).

Conclusions: Recently published systematic reviews of prevalence had poor methodology, particularly in relation to the use of inadequate methods for quality assessment and data synthesis, which may limit the validity of the results. Since prevalence estimates play a critical role in health systems, methods should be improved in order to provide more reliable estimates.

Patient or healthcare consumer involvement: Prevalence estimates are of critical importance to healthcare consumers and patients because of their impact on priority-setting definition and public health policies.