**Editorial**

# Quality assessment in systematic reviews: The importance of choosing the right tools

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The validity of the findings of the Systematic Review (SR) depends on the methodological quality of the individual studies in which they are included. Therefore, evaluating the validity of the included studies is an integral component of a systematic review (1). Bias or systematic error either exaggerates or underestimates the 'true' effect of an intervention or exposure. Typically, four sources for systematic error, including Selection bias, Performance bias, Attrition bias, and Detection bias, are considered in this assessment.

As the quality of the studies should be accurately evaluated by standardized tools (2), several tools have been designed for this purpose in recent decades. The Cochrane Collaboration recommends a specific tool for assessing the risk of bias in each included study. The judgment for each entry involves evaluating the risk of bias as low risk, high risk, or unclear risk, with the last category indicating either lack of information or uncertainty over the potential for bias (3). Moreover, in 2010 McMaster University researchers in Canada introduced the GRADE tool to evaluate the quality of studies and the strength of evidence in each included study (4). Moreover, several exclusive tools have been developed and introduced for other types of studies which one of them is the Newcastle-Ottawa Scale (NOS) for assessing the quality of nonrandomized studies.

While assessment of the quality of the primary studies is a crucial step in conducting SR, there are several mistakes in its accomplishment. In this step, researchers need to extract a set of data used to evaluate the quality of the studies; it is clear that the second set of data required using in answering the SR question. The aim of Quality Assessment in Systematic Reviews is categorizing studies regarding the risk of bias. To this, the researchers need a valid quality assessment tools with a threshold level of quality. Some authors have suggested that it is legitimate to exclude studies with a higher risk of bias; because the results of high-quality studies are closer to reality. On the other hand, others recommended that there is a need to further analysis to compare pooled effect sizes among two categories of the studies with a low and high risk of bias (5).

Therefore, the evaluation of a study's methodological quality can also be used to assess its eligibility for inclusion in the group of primary studies. Also, several scoring systems are available for categorizing studies according to the level of risk of bias. The reader is referred to Moher et al. (1995) for more information (6).

Jadbinderet al. assess the use of quality assessment tools in three hundred nine SRs. They found that quality assessment tools were used in a majority of SRs; however, a threshold level of quality for meta-analysis was stipulated in just 12.9% (n=40) (7). They were highlighting the need for more active or intuitive editorial processes to enhance the reporting of SRs.

Begg et al., in 1996, published the CONSORT statement "with a view to improving the quality of reporting of randomized controlled trials. The

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CONSORT statement comprised a checklist of key items of information considered necessary for the evaluation of the internal and external validity of the trial, and a flow diagram of the numbers of patients progressing through various stages of the trial" (8).

In the several Systematic Review studies submitted in our journal, the authors declared that they applied "CONSORT", "STROBE", "STARD" and other similar statements and checklists as a tool for assessing the quality of primary studies. While these statements have been formulated to improve the quality of reporting, they can not use for quality assessment. Therefore, an important point that should be considered by these authors is that the purpose of this statement is not the quality evaluation of the included studies in SR.

The Quality and Transparency of Health Research Network (EQUATOR) provide various reporting guidelines for a different type of health studies (9). As well, EQUATOR provided checklists and flow diagrams alongside each of the statements to guide authors in reporting a specific type of research (10). Therefore, the statements, checklists, and flow diagrams introduced in the EQUATOR network provide measures to improve the reporting of a variety of health studies and are not intended to measure the quality and internal validity of the studies.

Given it is a common error by the authors of the SR articles, we write this Letter to inform authors to use appropriate tools that invented primarily for the aim of quality assessment instead of the Misuse of the statements mentioned earlier.

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