

PICO and Risk Of bias Navigator for Evidence based medicine (PICORON-EBM)

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Abstract

Evidence-based medicine (EBM) involves determining treatment that matches the needs of each patient by integrating the best and latest available “scientific evidence” and “clinical skills”. Systematic review and meta-analysis refer to the process of searching databases and performing statistical analysis to integrate the results of multiple independent studies conducted in the past. The results obtained provide the highest quality evidence, which has become the foundation of various clinical guidelines.

Systematic review and meta-analysis are conducted in the following sequence: 1) formulation of a hypothesis, 2) searching databases for articles, 3) selection of research articles, 4) evaluation of bias for each study, 5) integration of the results, 6) verification of bias, and 7) evaluation of the quality of the meta-analysis. Especially regarding 2) article searches and 3) article selection, it is usual for two or more researchers to independently conduct a comprehensive search of databases and extract all the articles that meet the eligibility criteria. Generally, each researcher must evaluate thousands of research articles one by one, making the whole process very time-consuming. In addition, articles may be missed since the search is done manually, and the results tend to be arbitrary. Moreover, updating the information requires a lot of time and effort.

Generally, it takes one to two years to complete a single systematic review and meta-analysis.

As a result, many reviews are obsolete or missing. Therefore, development of software that could contribute to labor saving and automation of systematic review has been advocated.

PICORON-EBM aims to shorten the time required for assessment of PICO and Risk of Bias by natural language processing.

Strengths: 1) Quick and Easy operation, 2) You can add and delete any keywords to your area of interest.