

INDIVIDUALIZED BREAST CANCER RISK PREDICTION MODELS IN AVERAGE-RISK WOMEN: A SYSTEMATIC REVIEW AND QUALITY ASSESSMENT

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BACKGROUND

Individualized prediction models may be key for planning risk-based screening approaches. Our aim was to conduct a systematic review and quality assessment of these models addressed to women in the general population.

METHODS

We followed the Cochrane Collaboration methods searching in Medline, EMBASE and The Cochrane Library databases up to February 2018. We included studies reporting a model to estimate the individualized risk of breast cancer in women in the general population. Study quality was assessed by two independent reviewers. Results are narratively summarised.

RESULTS

We included 24 studies out of the 2976 citations initially retrieved. Twenty studies were based on four models, the Breast Cancer Risk Assessment Tool (BCRAT), the Breast Cancer Surveillance Consortium (BCSC), the Rosner & Colditz model, and the International Breast Cancer Intervention Study (IBIS), whereas four studies addressed other original models. Four of the studies included genetic information. The quality of the studies was moderate with few limitations in the discriminative power and data inputs. A maximum AUROC value of 0.71 was reported in the study conducted in a screening context.

CONCLUSIONS

Individualized risk prediction models are promising tools for implementing risk-based screening policies. However, it is a challenge to recommend any of them since they need further improvement in their quality and discriminatory capacity.

Figure 1. PRISMA flowchart.

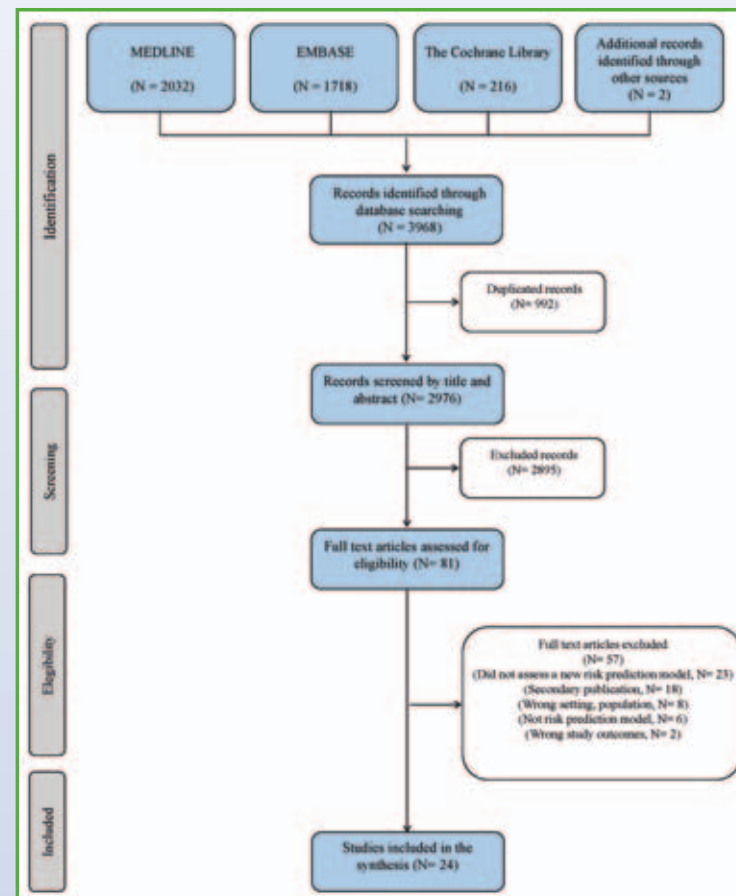


Figure 3. Risk of bias summary: review authors' judgments about each risk of bias item for each included study.



Figure 2. Area under the ROC curve (AUROC) and Confidence Intervals reported by the included studies.

