

A novel approach of understanding prediction models: TRIPOD framework

PROBLEM

In recent years, many multivariable prediction models are proposed to deal with clinical uncertainty in both the diagnostic and prognostic settings.¹ It is increasing the need to appraise the studies of the models to understand when and how to use.¹

We can use PICO framework: Patients, Intervention, Comparator, and Outcome to deal with therapy studies.² But there is no such formulation for prediction models.

Reporting of a multivariable prediction model for Individual Prognosis Or Diagnosis) statement.¹

Nine doctors who translated the TRIPOD explanation and elaboration into Japanese conducted a 90-minute workshop to critically appraise a prediction study.³ Participants read an article aimed to develop, validate, and compare prediction models using TRIPOD checklist as homework. In the day, they organized small groups, shared the homework, and received feedback using TRIPOD framework.

INTERVENTION

We developed TRIPOD framework (Figure 1): Type of study, Research objectives, Index rule, Participants, Outcome, Diagnostic/prognostic performance measures, which is in honor of TRIPOD (Transparent

CONTEXT

We conducted a workshop in the Annual Meeting of the Japan Chapter of the American College of Physicians in Kyoto 2016 named "How to use prediction models -based on TRIPOD statement-".⁴

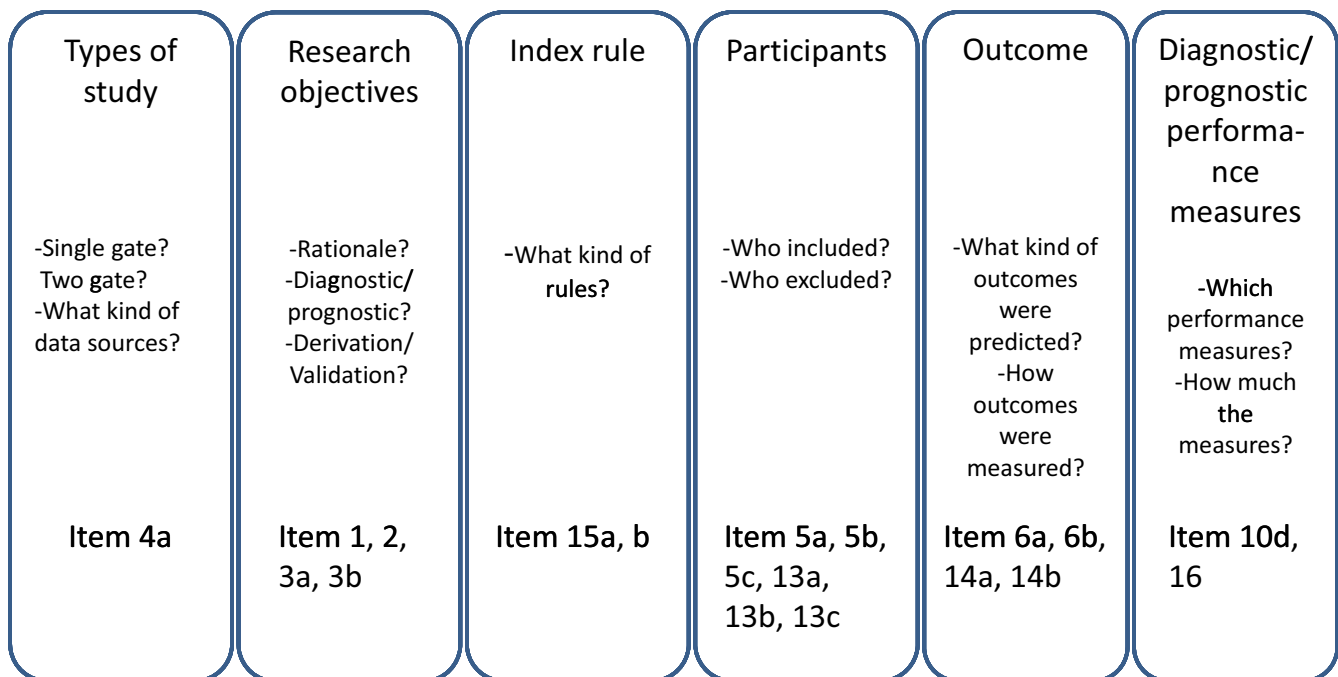


FIGURE 1 Framework to understand the prediction model built on the TRIPOD elements * Items are based on TRIPOD checklist (Moons KGM, Altman DG, Reitsma JB, et al. Transparent Reporting of a multivariable prediction model for Individual Prognosis Or Diagnosis (TRIPOD): Explanation and Elaboration. *Ann Intern Med.* 2015;162:W1-W73.)

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OUTCOME

Two medical students and twenty-two medical doctors participated in this workshop. Twenty-two participants responded postanonymized questionnaire (92%). Degrees of satisfaction evaluated by 5-point Likert scale were 4.0 points (standard deviation 0.72).

LESSONS LEARNED

Participants were satisfied. Reflection of organizer indicated two points to be improved. First point is pre-announcement to do homework, because considerable participants did not read the article. Second point is to change the homework simple, because the homework contained three research objectives (ie. development, validation, and compare) and four prediction models, which confused participants. More simple study, which aim to develop and validate only for one prediction rule, may help participants to understand prediction model easily.

We will improve our project to increase the number of physician who understand both the benefits and the possible problems of using prediction models.

CONFLICT OF INTEREST

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

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