
DEVELOPMENT AND VALIDATION OF A PREDICTION ALGORITHM FOR RECURRENCE OF MAJOR DEPRESSION

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Objectives: To develop and validate a prognostic model for predicting recurrence of major depression using data from a population-based, nationally representative cohort.

Methods: Wave 1 and wave 2 longitudinal data from the US National Epidemiological Survey on Alcohol and Related Condition. Participants with a major depressive disorder at baseline and who had visited health professionals for depression were included in this analysis. Mental disorders were assessed based on the DSM-IV criteria. For this study, we included the wave 1 (baseline) participants who reported current or lifetime major depressive episode. We included eligible participants from South and West region in the training data (n = 1,518). Eligible participants from Northeast and Mid-West region were kept in validation data (n = 1,195).

Results: With the training data, a prediction model with 19 unique factors had a C statistics of 0.7504 and excellent calibration. The model had a C statistics of 0.7195 in external validation data (n = 1195) and 0.7365 in combined data. The algorithm calibrated very well in validation data. In the combined data, the 3-year observed and predicted risk of recurrence was 25.40% and 25.34%, respectively.

Conclusions: The developed prediction model for recurrence of major depression has acceptable discrimination and excellent calibration and is feasible to be used by physicians. The prognostic model may assist physicians and patients in quantifying the probability of recurrence so that physicians can develop specific treatment plans for those who are at high risk of recurrence, leading to personalized treatment and better use of resources.