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Development and Validation of an International Risk Prediction Algorithm for Episodes of Major Depression in General Practice Attendees

The PredictD Study

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Context Strategies for prevention of depression are hindered by lack of evidence about the combined predictive effect of known risk factors.

Objectives To develop a risk algorithm for onset of major depression.

Design Cohort of adult general practice attendees followed up at 6 and 12 months. We measured 39 known risk factors to construct a risk model for onset of major depression using stepwise logistic regression. We corrected the model for overfitting and tested it in an external population.

Setting General practices in 6 European countries and in Chile.

Participants In Europe and Chile, 10 045 attendees were recruited April 2003 to February 2005. The algorithm was developed in 5216 European attendees who were not depressed at recruitment and had follow-up data on depression status. It was tested in 1732 patients in Chile who were not depressed at recruitment.

Main Outcome Measure *DSM-IV* major depression.

Results Sixty-six percent of people approached participated, of whom 89.5% participated again at 6 months and 85.9%, at 12 months. Nine of the 10 factors in the risk algorithm were age, sex, educational level achieved, results of lifetime screen for depression, family history of psychological difficulties, physical health and mental health subscale scores on the Short Form 12, unsupported difficulties in paid or unpaid work, and experiences of discrimination. Country was the tenth factor. The algorithm's average C index across countries was 0.790 (95% confidence interval [CI], 0.767-0.813). Effect size for difference in predicted log odds of depression between European attendees who became depressed and those who did not was 1.28 (95% CI, 1.17-1.40). Application of the algorithm in Chilean attendees resulted in a C index of 0.710 (95% CI, 0.670-0.749).

Conclusion This first risk algorithm for onset of major depression functions as well as similar risk algorithms for cardiovascular events and may be useful in prevention of depression.

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