**eFigure 1.** Conversion chart for overtime work hours and working hours for the Japan Epidemiology Collaboration on Occupational Health Study (2012–2017)

| Overtime work categories | <45 h | 45-79 h | 80-99 h | ≥100 h |
|--------------------------|-------|---------|---------|--------|
| Overtime work hours per month | 0     | 20      | 40      | 60     | 80     | 100    | 120    |
| Working hours per week   | 40    | 45      | 50      | 55     | 60     | 65     | 70     |
| Working hours per day    | 8     | 9       | 10      | 11     | 12     | 13     | 14     |

This figure assumes an employee works 5 days a week and 4 weeks a month.
**Table 1.** Adjusted hazard ratios and 95% confidence intervals for medically certified long-term sickness absence due to mental health problems with additional adjustment for job grade among workers at one company (2012–2017) (N = 39,459)

| Overwork hours/month | Crude model HR | Model 1 HR | Model 2 HR |
|----------------------|----------------|-------------|-------------|
| <45                  | 1.00 (ref.)    | 1.00 (ref.) | 1.00 (ref.) |
| 45–79                | 0.74 (0.58, 0.96) | 0.67 (0.52, 0.86) | 0.67 (0.52, 0.86) |
| 80–99                | 1.13 (0.65, 1.97) | 0.98 (0.56, 1.72) | 0.99 (0.57, 1.73) |
| ≥100                 | 1.77 (0.91, 3.44) | 1.60 (0.82, 3.13) | 1.57 (0.80, 3.06) |

HR, hazard ratio.

Model 1 was adjusted for age (in years), sex, occupation and job grade while model 2 was further adjusted for possible mediators linking working hours and long-term sickness absence due to mental health problems, i.e., current smoking (yes/no), body mass index categories (<18.5; 18.5–24.9; 25.0–29.9; ≥30 kg/m²), baseline hypertension, diabetes, and dyslipidemia. We treated worksites as clusters in the analysis.