Supplemental Figure 1. Kaplan–Meier survival curves for time to mood episode relapse associated with circadian activity rhythm parameters in 189 patients with bipolar disorder

Participants were divided into two groups (category based on the median value) according to each circadian activity rhythm parameter, including midline-estimating statistic of rhythm (A), amplitude (B), period (C), acrophase (D), interdaily stability (E), intradaily variability (F), least active continuous 5-h period (G), least active continuous 5-h period onset (H), most active continuous 10-h period (I), most active continuous 10-h period (J), relative amplitude (K).
Midline-estimating statistic of rhythm, counts/min

Log-rank test
Low vs. High: $P = 0.002$

- Low: < 114.6
- High: ≥ 114.6

Number at risk

|       | 0  | 2  | 4  | 6  | 8  | 10 | 12 |
|-------|----|----|----|----|----|----|----|
| Low   | 95 | 84 | 78 | 70 | 61 | 48 | 42 |
| High  | 94 | 86 | 82 | 75 | 70 | 66 | 62 |
Amplitude, counts/min

- Low: < 81.7
- High: ≥ 81.7

Log-rank test

Low vs. High: \( P = 0.049 \)

Number at risk

|       | 95 | 84 | 79 | 71 | 63 | 50 | 45 |
|-------|----|----|----|----|----|----|----|
| Low   |    |    |    |    |    |    |    |
| High  | 94 | 86 | 81 | 74 | 68 | 64 | 59 |

Month of follow up
Early vs. Late: $P = 0.343$

Number at risk

|       | Early | Late |
|-------|-------|------|
| Month | 99    | 90   |
| 2     | 89    | 81   |
| 4     | 83    | 77   |
| 6     | 78    | 67   |
| 8     | 72    | 59   |
| 10    | 64    | 50   |
| 12    | 58    | 46   |
Acrophase, clock time

- Early: < 14:18
- Late: ≥ 14:18

Log-rank test
Early vs. Late: $P = 0.395$

Number at risk

|       | Early | Late |
|-------|-------|------|
| 0     | 95    | 94   |
| 2     | 89    | 81   |
| 4     | 85    | 75   |
| 6     | 76    | 69   |
| 8     | 71    | 60   |
| 10    | 59    | 55   |
| 12    | 55    | 49   |
Interdaily stability

Log-rank test
Low vs. High: $P = 0.628$

Number at risk

| Month of follow up | LOW: < 0.48 | HIGH: ≥ 0.48 |
|--------------------|-------------|-------------|
| 0                  | 95          | 94          |
| 2                  | 85          | 85          |
| 4                  | 81          | 79          |
| 6                  | 71          | 74          |
| 8                  | 65          | 66          |
| 10                 | 56          | 58          |
| 12                 | 49          | 55          |
Intradaily variability

- **Low**: < 0.9
- **High**: ≥ 0.9

Log-rank test

Low vs. High: $P = 0.291$
Least active continuous 5-h period, counts/min

Log-rank test
Low vs. High: $P = 0.679$

Number at risk

|       | Low  | High |
|-------|------|------|
| 95    | 87   | 83   |
| 87    | 82   | 78   |
| 82    | 76   | 69   |
| 76    | 67   | 64   |
| 67    | 58   | 56   |
| 58    | 54   | 50   |
Least active continuous 5-h period onset, per hour

- Early: < 23:41
- Late: ≥ 23:41

Log-rank test
Low vs. High: $P = 0.040$
Most active continuous 10-h period, counts/min

- **Low**: < 181.5
- **High**: ≥ 181.5

Log-rank test
Low vs. High: \( P = 0.022 \)

Number at risk

|       | 95  | 83  | 77  | 69  | 63  | 49  | 44  |
|-------|-----|-----|-----|-----|-----|-----|-----|
| _Low_ |     |     |     |     |     |     |     |
| _High_| 94  | 87  | 83  | 76  | 68  | 65  | 60  |
Probability without mood episode relapse

Most active continuous
10-h period onset, clock time

Log-rank test
Early vs. Late: $P = 0.005$

Month of follow up

Number at risk
Early: 95 90 86 80 73 66 62
Late: 94 80 74 65 58 48 42

Early: < 8:18
Late: ≥ 8:18
(K)

Probability without mood episode relapse

Month of follow up

Number at risk

|       | 0  | 2  | 4  | 6  | 8  | 10 | 12 |
|--------|----|----|----|----|----|----|----|
| Low    | 100| 91 | 86 | 76 | 68 | 58 | 51 |
| High   | 89 | 79 | 74 | 69 | 63 | 56 | 53 |

Relative amplitude
- Low: < 0.86
- High: ≥ 0.86

Log-rank test
Low vs. High: \( P = 0.379 \)