Table S1

*Assessment Schedule for Primary Study Measures*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Measure | Baseline | Week 2 | Week 4 | Week 6 | Week 8 | Week 10 | Week 12 | Week 14 | Week 16 |
| MADRS | X | X | X | X | X | X | X | X | X |
| QIDS-SR | X | X | X |  | X | X | X |  | X |
| DARS | X |  |  |  | X |  |  |  | X |
| SHAPS | X |  |  |  | X |  |  |  | X |
| BIS/BAS | X | X |  |  | X | X\* |  |  | X |

*Note*. X indicates a measure was administered at the given time point. \*Only individuals diagnosed with MDD completed the BIS/BAS scales at Week 10. Abbreviations: MADRS = Montgomery–Åsberg Depression Rating Scale; QIDS-SR = Quick Inventory of Depressive Symptomatology – Self Report; DARS = Dimensional Anhedonia Rating Scale; SHAPS = Snaith-Hamilton Pleasure Scale; BIS = Behavioural Inhibition System; BAS = Behavioural Approach System.

Table S2

*Correlations between the BIS/BAS Scales and Primary Study Outcomes from Week 0 to Week 8*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Week 0 |  | Week 2 |  | Week 8 |
|  | MADRS  | QIDS  | SHAPS  | DARS  |  | MADRS  | QIDS  |  | MADRS  | QIDS  | SHAPS  | DARS  |
| 1. BIS Week 0 | .09 | **.32** | .01 | .03 |  | .09 | **.22** |  | .06 | .11 | -.04 | -.04 |
| 2. BAS Week 0 | -.08 | -.13 | **-.33** | **-.31** |  | .01 | .08 |  | .09 | .05 | -.06 | -.05 |
| 3. BAS-DR Week 0 | -.03 | -.12 | **-.22** | **-.25** |  | -.05 | .02 |  | .05 | .03 | -.06 | -.01 |
| 4. BAS-RR Week 0 | -.04 | -.10 | **-.34** | **-.31** |  | .03 | .08 |  | .07 | .05 | -.08 | -.09 |
| 5. BAS-FS Week 0 | -.12 | -.10 | **-.26** | **-.20** |  | .03 | .08 |  | .11 | .05 | .01 | -.02 |
| 6. BIS Week 2 | **.14** | **.35** | .14 | **.16** |  | **.26** | **.43** |  | **.16** | **.25** | .05 | .11 |
| 7. BAS Week 2 | **-.14** | **-.15** | **-.34** | **-.30** |  | **-.19** | -.07 |  | -.07 | **-.16** | **-.18** | **-.23** |
| 8. BAS-DR Week 2 | -.13 | **-.18** | **-.27** | **-.29** |  | **-.22** | **-.14** |  | -.13 | **-.19** | **-.16** | **-.14** |
| 9. BAS-RR Week 2 | -.12 | **-.14** | **-.33** | **-.27** |  | **-.21** | -.07 |  | -.09 | **-.14** | **-.19** | **-.28** |
| 10. BAS-FS Week 2 | -.09 | -.05 | **-.21** | **-.15** |  | -.01 | .03 |  | .05 | -.04 | -.07 | -.10 |
| 11. BIS Week 8 | .09 | **.30** | .10 | .05 |  | **.24** | **.38** |  | **.30** | **.34** | **.14** | **.18** |
| 12. BAS Week 8 | -.10 | -.11 | **-.29** | **-.24** |  | **-.19** | -.07 |  | **-.24** | **-.26** | **-.33** | **-.40** |
| 13. BAS-DR Week 8 | -.09 | -.10 | **-.24** | **-.17** |  | **-.21** | -.08 |  | **-.25** | **-.26** | **-.31** | **-.31** |
| 14. BAS-RR Week 8 | -.05 | -.06 | **-.27** | **-.20** |  | **-.14** | -.09 |  | **-.23** | **-.22** | **-.36** | **-.42** |
| 15. BAS-FS Week 8 | -.12 | -.09 | **-.21** | **-.22** |  | -.11 | -.01 |  | -.11 | **-.18** | **-.16** | **-.27** |

*Note*: *N =* 210. Bold signifies an effect is significant at *p* < .05. Abbreviations: MADRS = Montgomery–Åsberg Depression Rating Scale; QIDS-SR = Quick Inventory of Depressive Symptomatology – Self Report; DARS = Dimensional Anhedonia Rating Scale; SHAPS = Snaith-Hamilton Pleasure Scale; BIS = Behavioural Inhibition System; BAS = Behavioural Approach System; BAS-DR = BAS Drive Subscale; BAS-RR = BAS Reward Responsiveness Subscale; BAS-FS = BAS Fun-Seeking Subscale.

Table S3

*Correlations between the BIS/BAS Scales and Primary Study Outcomes from Week 8 to Week 16 in the Nonresponder Subsample*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Week 8 |  | Week 10 |  | Week 16 |
|  | MADRS  | QIDS | SHAPS | DARS |  | MADRS  | QIDS  |  | MADRS | QIDS | SHAPS  | DARS  |
| 1. BIS Week 8 | .08 | .16 | -.11 | -.21 |  | .18 | **.21** |  | .06 | .15 | -.16 | -.17 |
| 2. BAS Week 8 | -.04 | -.10 | **-.37** | **-.39** |  | -.08 | -.06 |  | -.03 | -.08 | -.16 | **-.30** |
| 3. BAS-DR Week 8 | -.08 | -.08 | **-.37** | **-.25** |  | -.17 | -.06 |  | -.11 | -.09 | -.16 | **-.23** |
| 4. BAS-RR Week 8 | -.03 | -.07 | **-.35** | **-.40** |  | -.06 | -.07 |  | -.03 | -.11 | -.17 | **-.32** |
| 5. BAS-FS Week 8 | -.01 | -.09 | **-.22** | **-.32** |  | .02 | -.02 |  | .08 | .01 | -.08 | -.20 |
| 6. BIS Week 10 | .17 | **.39** | .08 | -.08 |  | **.31** | **.41** |  | .18 | **.30** | .04 | .00 |
| 7. BAS Week 10 | -.15 | -.15 | **-.40** | **-.42** |  | **-.25** | **-.25** |  | **-.21** | -.17 | **-.24** | **-.40** |
| 8. BAS-DR Week 10 | -.18 | -.12 | **-.38** | **-.27** |  | **-.29** | -.20 |  | **-.21** | -.13 | **-.22** | **-.30** |
| 9. BAS-RR Week 10 | -.13 | -.09 | **-.39** | **-.50** |  | **-.22** | **-.21** |  | **-.27** | -.17 | **-.29** | **-.48** |
| 10. BAS-FS Week 10 | -.07 | -.17 | **-.23** | **-.25** |  | -.12 | **-.23** |  | -.03 | -.13 | -.08 | -.18 |
| 11. BIS Week 16 | .05 | .18 | -.12 | -.21 |  | .14 | **.24** |  | .07 | .20 | -.05 | -.07 |
| 12. BAS Week 16 | -.07 | -.11 | **-.30** | **-.39** |  | -.19 | -.18 |  | **-.24** | **-.21** | **-.35** | **-.48** |
| 13. BAS-DR Week 16 | -.04 | -.02 | **-.23** | -.17 |  | -.19 | -.12 |  | **-.24** | -.19 | **-.31** | **-.35** |
| 14. BAS-RR Week 16 | -.02 | -.05 | **-.27** | **-.47** |  | -.15 | -.13 |  | **-.30** | -.17 | **-.35** | **-.51** |
| 15. BAS-FS Week 16 | -.11 | -.19 | **-.22** | **-.29** |  | -.12 | -.18 |  | -.05 | -.15 | -.19 | **-.29** |

*Note*: *N =* 90. Bold signifies an effect is significant at *p* < .05. Abbreviations: MADRS = Montgomery–Åsberg Depression Rating Scale; QIDS-SR = Quick Inventory of Depressive Symptomatology – Self Report; DARS = Dimensional Anhedonia Rating Scale; SHAPS = Snaith-Hamilton Pleasure Scale; BIS = Behavioural Inhibition System; BAS = Behavioural Approach System; BAS-DR = BAS Drive Subscale; BAS-RR = BAS Reward Responsiveness Subscale; BAS-FS = BAS Fun-Seeking Subscale.

Table S4

*Predicting Week 8 Depression and Anhedonia from Early Change in BIS/BAS, Controlling for Early Symptom Change*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Week 8 MADRS*N* = 210 |  | Week 8 QIDS-SR*N* = 210 |
| Variable | β | *SE* | *p* |  | β | *SE* | *p* |
| 1. Age | .04 | .07 | .53 |  | .11 | .07 | .10 |
| 2. Sex (1 = F, 2 = M) | .06 | .07 | .39 |  | .00 | .07 | .97 |
| 3. Δ MADRS Week 0-2 | **.42** | **.06** | **< .001** |  | --- | --- | --- |
| 4. Δ QIDS-SR Week 0-2 | --- | --- | --- |  | **.40** | **.06** | **< .001** |
| 5. Δ BIS Week 0-2 | .05 | .07 | .53 |  | .08 | .07 | .27 |
| 6. Δ BAS Week 0-2 | -.08 | .07 | .25 |  | **-.20** | **.06** | **.002** |
|  |  |  |  |  |  |  |  |
|  | Week 8 MADRS*N* = 210 |  | Week 8 QIDS-SR*N* = 210 |
| Variable | β | *SE* | *p* |  | β | *SE* | *p* |
| 1. Age | .05 | .07 | .45 |  | .13 | .07 | .05 |
| 2. Sex (1 = F, 2 = M) | .06 | .07 | .37 |  | .00 | .07 | .98 |
| 3. Δ MADRS Week 0-2 | **.42** | **.06** | **< .001** |  | --- | --- | --- |
| 4. Δ QIDS-SR Week 0-2 | --- | --- | --- |  | **.41** | **.06** | **< .001** |
| 7. Δ BAS-RR Week 0-2 | -.01 | .08 | .91 |  | -.09 | .07 | .20 |
| 8. Δ BAS-DR Week 0-2 | -.11 | .07 | .14 |  | -.16 | .07 | .02 |
| 9. Δ BAS-FS Week 0-2 | .01 | .07 | .84 |  | -.01 | .07 | .87 |

*Note*: Bold signifies an effect survived Bonferroni correction for multiple comparisons. Abbreviations: MADRS = Montgomery–Åsberg Depression Rating Scale; QIDS-SR = Quick Inventory of Depressive Symptomatology – Self Report; DARS = Dimensional Anhedonia Rating Scale; SHAPS = Snaith-Hamilton Pleasure Scale; BIS = Behavioural Inhibition System; BAS = Behavioural Approach System; BAS-DR = BAS Drive Subscale; BAS-RR = BAS Reward Responsiveness Subscale; BAS-FS = BAS Fun-Seeking Subscale.

Table S5

*Logistic Regressions Predicting Remission Status in Nonresponders from Early Change in BIS/BAS*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Week 16 MADRS Remission*N* = 90 |  | Week 16 QIDS-SR Remission*N* = 90 |
| Variable | β | *SE* | *OR* | *p* |  | β | *SE* | *OR* | *p* |
| 1. Age | .08 | .12 | 1.01 | .51 |  | -.32 | .16 | .95 | **.048** |
| 2. Sex (1 = F, 2 = M) | .002 | .12 | 1.01 | .99 |  | -.14 | .15 | .55 | .35 |
| 3. MADRS Week 0 | -.37 | .13 | .90 | **.003** |  | --- | --- | --- | --- |
| 4. QIDS-SR Week 0 | --- | --- | --- | --- |  | -.28 | .17 | .88 | .10 |
| 5. Δ BIS Week 0-2 | -.10 | .12 | .81 | .39 |  | -.10 | .17 | .80 | .54 |
| 6. Δ BAS Week 0-2 | .15 | .13 | 1.37 | .23 |  | .06 | .17 | 1.14 | .71 |
|  |  |  |  |  |  |  |  |  |  |
|  | Week 8 MADRS Remission*N* = 290 |  | Week 8 QIDS-SR Remission*N* = 90 |
| Variable | β | *SE* | *OR* | *p* |  | β | *SE* | *OR* | *p* |
| 1. Age | .08 | .12 | 1.01 | .52 |  | -.29 | .16 | .95 | .08 |
| 2. Sex (1 = F, 2 = M) | .03 | .12 | 1.11 | .83 |  | -.17 | .14 | .47 | .23 |
| 3. MADRS Week 0 | -.38 | .12 | .90 | **.002** |  | --- | --- | --- | --- |
| 4. QIDS-SR Week 0 | --- | --- | --- | --- |  | -.35 | .15 | .84 | **.02** |
| 7. Δ BAS-RR Week 0-2 | .25 | .14 | 1.68 | .08 |  | .33 | .18 | 2.11 | .08 |
| 8. Δ BAS-DR Week 0-2 | -.01 | .15 | .98 | .96 |  | -.27 | .18 | .55 | .13 |
| 9. Δ BAS-FS Week 0-2 | -.04 | .14 | .93 | .80 |  | .10 | .18 | 1.25 | .59 |

*Note*: Bold signifies an effect is significant at *p* < .05. Abbreviations: MADRS = Montgomery–Åsberg Depression Rating Scale; QIDS-SR = Quick Inventory of Depressive Symptomatology – Self Report; BAS = Behavioural Approach System; BAS-DR = BAS Drive Subscale; BAS-RR = BAS Reward Responsiveness Subscale; BAS-FS = BAS Fun-Seeking Subscale.

 Table S6

*Predicting Depression and Anhedonia in NonResponders from Early Change in BIS/BAS, Controlling for Early Symptom Change*

|  |  |  |  |
| --- | --- | --- | --- |
|  | Week 16 MADRS(*N =* 90) |  | Week 16 QIDS-SR(*N =* 90) |
| Variable | β | *SE* | *p* |  | β | *SE* | *p* |
| 1. Age | .04 | .10 | .65 |  | .13 | .10 | .17 |
| 2. Sex (1 = F, 2 = M) | .11 | .10 | .27 |  | .03 | .10 | .74 |
| 3. Δ MADRS Week 8-10 | **.36** | **.09** | **< .001** |  | --- | --- | --- |
| 4. Δ QIDS-SR Week 8-10 | --- | --- | --- |  | **.37** | **.10** | **< .001** |
| 7. Δ BIS Week 8-10 | .08 | .10 | .40 |  | .24 | .10 | .01 |
| 8. Δ BAS Week 8-10 | -.19 | .10 | .06 |  | .01 | .11 | .96 |
|  |  |  |  |  |  |  |  |
|  | Week 16 MADRS(*N =* 90) |  | Week 16 QIDS-SR(*N =* 90) |
| Variable | β | *SE* | *p* |  | β | *SE* | *P* |
| 1. Age | .03 | .10 | .78 |  | .15 | .10 | .15 |
| 2. Sex (1 = F, 2 = M) | .09 | .10 | .34 |  | .02 | .10 | .83 |
| 3. Δ MADRS Week 8-10 | **.37** | **.09** | **< .001** |  | --- | --- | --- |
| 4. Δ QIDS-SR Week 8-10 | --- | --- | --- |  | **.37** | **.10** | **< .001** |
| 7. Δ BAS-RR Week 8-10 | **-.31** | **.11** | **.005** |  | .02 | .12 | .85 |
| 8. Δ BAS-DR Week 8-10 | .04 | .12 | .75 |  | .01 | .13 | .92 |
| 9. Δ BAS-FS Week 8-10 | .04 | .11 | .74 |  | -.09 | .12 | .44 |

*Note*: Bold signifies an effect survived Bonferroni correction for multiple comparisons. Abbreviations: MADRS = Montgomery–Åsberg Depression Rating Scale; QIDS-SR = Quick Inventory of Depressive Symptomatology – Self Report; DARS = Dimensional Anhedonia Rating Scale; SHAPS = Snaith-Hamilton Pleasure Scale; BIS = Behavioural Inhibition System; BAS = Behavioural Approach System; BAS-DR = BAS Drive Subscale; BAS-RR = BAS Reward Responsiveness Subscale; BAS-FS = BAS Fun-Seeking Subscale.