**Supplementary Material – Main Tables**

**Music reinforcer**

**Table S1.** *Sensitivity analysis – Music reinforcer, training phase*. Mixed-effects linear regression with DT% on target as the dependent variable (*observations* =6,960, *n* = 58). Blocks are modeled separately as discrete values

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| Block 1 | 0.54 (0.46, 0.63) | 12.0 | <.001 |
| Block 2 | 0.67 (0.59, 0.76) | 14.9 | <.001 |
| Block 3 | 0.69 (0.60, 0.78) | 15.3 | <.001 |
| Block 4 | 0.69 (0.60, 0.78) | 15.2 | <.001 |
| STAI-T | -0.05 (-0.13, 0.02) | -1.38 | .25 |
| BMRQ | 0.04 (-0.01, 0.08) | 1.51 | .24 |
| Block 1 \* Group (HD) | 0.12 (-0.03, 0.27) | 1.49 | .24 |
| Block 2 \* Group (HD) | 0.06 (-0.09, 0.21) | 0.80 | .42 |
| Block 3 \* Group (HD) | 0.10 (-0.05, 0.25) | 1.25 | .27 |
| Block 4 \* Group (HD) | 0.07 (-0.08, 0.22) | 0.92 | .40 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. Block (1-4), group and interaction effects are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. STAI-T and BMRQ are modeled with standardized scores. HD = High Depression (group); STAI-T = State-Trait Anxiety Inventory – Trait; BMRQ = Barcelona Music Reward Questionnaire.

**Table S2.** *Sensitivity analysis – Music reinforcer, assessment phase*. Mixed-effects linear regression with DT% on target as the dependent variable (*observations* = 3,454, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| (Intercept) | 0.53 (0.48, 0.57) |  |  |
| Assessment (post) | 0.09 (0.07, 0.11) | 9.74 | <.001 |
| Group (HD) | 0.01 (-0.07, 0.08) | 0.20 | .84 |
| STAI-T | 0.01 (-0.03, 0.05) | 0.52 | .73 |
| BMRQ | -0.02 (-0.04, 0.00) | -1.84 | .11 |
| Assessment (post) \* Group (HD) | -0.11 (-0.14, -0.09) | -8.66 | <.001 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. The intercept effect is modeled with an unstandardized B coefficient. Assessment, group and interaction effects are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. STAI-T and BMRQ are modeled with standardized scores. HD = High Depression (group); STAI-T = State-Trait Anxiety Inventory – Trait; BMRQ = Barcelona Music Reward Questionnaire.

**White noise reinforcer**

**Table S3.** *Sensitivity analysis – White noise reinforcer, training phase*. Mixed-effects linear regression with DT% on target as the dependent variable (*observations* =6,959, *n* = 58). Blocks are modeled separately as discrete values

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| Block 1 | 0.61 (0.52, 0.70) | 13.0 | <.001 |
| Block 2 | 0.68 (0.59, 0.77) | 14.6 | <.001 |
| Block 3 | 0.72 (0.63, 0.81) | 15.5 | <.001 |
| Block 4 | 0.72 (0.63, 0.81) | 15.4 | <.001 |
| STAI-T | 0.02 (-0.06, 0.10) | 0.45 | .95 |
| Noise annoyance | 0.06 (0.01, 0.10) | 2.18 | .07 |
| Block 1 \* Group (HD) | -0.01 (-0.17, 0.15) | -0.14 | .95 |
| Block 2 \* Group (HD) | -0.02 (-0.18, 0.14) | -0.28 | .95 |
| Block 3 \* Group (HD) | -0.03 (-0.19, 0.13) | -0.33 | .95 |
| Block 4 \* Group (HD) | 0.00 (-0.16, 0.15) | -0.06 | .95 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. Block (1-4), group and interaction effects are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. STAI-T and noise annoyance are modeled with standardized scores. HD = High Depression (group); STAI-T = State-Trait Anxiety Inventory – Trait.

**Table S4.** *Sensitivity analysis – White noise reinforcer, assessment phase*. Mixed-effects linear regression with DT% on target as the dependent variable (*observations* =3,452, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| (Intercept) | 0.51 (0.47, 0.55) |  |  |
| Assessment (post) | 0.07 (0.05, 0.09) | 7.01 | <.001 |
| Group (HD) | -0.01 (-0.08, 0.06) | -0.24 | .81 |
| STAI-T | 0.01 (-0.02, 0.05) | 0.58 | .81 |
| Noise annoyance | 0.00 (-0.02, 0.02) | 0.25 | .81 |
| Assessment (post) \* Group (HD) | 0.02 (-0.01, 0.05) | 1.46 | .29 |

*Note.* Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. The intercept effect is modeled with an unstandardized B coefficient. Assessment, group and interaction effects are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. STAI-T and noise annoyance are modeled with standardized scores. HD = High Depression (group); STAI-T = State-Trait Anxiety Inventory – Trait.

**Integrated analysis**

**Table S5.** *Sensitivity analysis – White noise + Music reinforcers, assessment phase*. Mixed-effects linear regression with DT% on target as the dependent variable (*observations* =6,906, *n* = 116)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| (Intercept) | 0.51 (0.48, 0.55) |  |  |
| Assessment (post) | 0.07 (0.05, 0.09) | 7.19 | <.001 |
| Group (HD) | -0.01 (-0.07, 0.06) | -0.19 | 1.00 |
| Reinforcer (music) | 0.01 (-0.03, 0.06) | 0.63 | 1.00 |
| STAI-T | 0.01 (-0.01, 0.04) | 0.92 | 1.00 |
| BMRQ/noise annoyance | -0.01 (-0.03, 0.01) | -1.24 | 1.00 |
| Assessment (post) \* Group (HD) | 0.02 (-0.01, 0.05) | 1.50 | .80 |
| Assessment (post) \* Reinforcer (music) | 0.02 (0.00, 0.05) | 1.60 | .77 |
| Group (HD) \* Reinforcer (music) | 0.01 (-0.05, 0.08) | 0.36 | 1.00 |
| Assessment (post) \* Group (HD) \* Reinforcer (music) | -0.14 (-0.17, -0.10) | -7.03 | <.001 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. The intercept effect is modeled with an unstandardized B coefficient. Assessment, group and interaction effects are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. STAI-T and BMRQ/noise annoyance are modeled with standardized scores. Standardized BMRQ scores are modeled for participants reinforced with music, standardized noise annoyance scores are modeled for participants reinforced with white noise. HD = High Depression (group); STAI-T = State-Trait Anxiety Inventory – Trait; BMRQ = Barcelona Music Reward Questionnaire.

**Table S7.** *Epochs analysis – Music reinforcer, assessment phase*. Mixed-effects analysis of variance with DT% on target as the dependent variable (*observations* = 348, *n* = 58)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | *df* | *F* | *p* | *η2p* |
| Group | 1 | 2.00 | .38 | 0.03 |
| Time | 1 | 12.8 | .001 | 0.04 |
| Epoch | 2 | 1.28 | .49 | 0.00 |
| Time \* Group | 1 | 26.7 | <.001 | 0.09 |
| Time \* Epoch | 2 | 0.11 | .97 | 0.00 |
| Group \* Epoch | 2 | 0.03 | .97 | 0.00 |
| Time \* Group \* Epoch | 2 | 0.25 | .97 | 0.00 |
| Residuals | 280 | - | - | - |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction.

η2p – Eta squared (partial)

**Table S8.** *Epochs analysis – White noise reinforcer, assessment phase*. Mixed-effects analysis of variance with DT% on target as the dependent variable (*observations* = 348, *n* = 58)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | *df* | *F* | p | η2p |
| Group | 1 | 1.40 | .52 | 0.02 |
| Time | 1 | 72.7 | <.001 | 0.21 |
| Epoch | 2 | 1.08 | .52 | 0.01 |
| Time \* Group | 1 | 0.79 | .52 | 0.00 |
| Time \* Epoch | 2 | 0.54 | .61 | 0.00 |
| Group \* Epoch | 2 | 2.52 | .29 | 0.02 |
| Time \* Group \* Epoch | 2 | 0.49 | .61 | 0.00 |
| Residuals | 280 | - | - | - |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction.

η2p – Eta squared (partial)

**Table S9.** *Music reinforcer, training phase*. Mixed-effects linear regression with PHQ-9 as predictor and DT% on target as the dependent variable (*observations* = 6,960, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| Block 1 | 0.60 (0.55, 0.65) | 24.0 | <.001 |
| Block 2 | 0.70 (0.65, 0.75) | 28.1 | <.001 |
| Block 3 | 0.74 (0.69, 0.79) | 29.5 | <.001 |
| Block 4 | 0.72 (0.67, 0.77) | 29.0 | <.001 |
| Block 1 \* PHQ-9 | 0.01 (-0.04, 0.06) | 0.35 | .77 |
| Block 2 \* PHQ-9 | -0.01 (-0.06, 0.04) | -0.50 | .77 |
| Block 3 \* PHQ-9 | -0.01 (-0.06, 0.04) | -0.29 | .77 |
| Block 4 \* PHQ-9 | -0.01 (-0.06, 0.04) | -0.39 | .77 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. Blocks (1-4) are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. PHQ-9 is modeled with standardized scores. PHQ-9 = Patient Health Questionnaire 9.

**Table S10.** *Music reinforcer, training phase*. Mixed-effects linear regression with SHAPS as predictor and DT% on target as the dependent variable (*observations* = 6,960, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| Block 1 | 0.60 (0.55, 0.65) | 24.7 | <.001 |
| Block 2 | 0.70 (0.65, 0.75) | 28.9 | <.001 |
| Block 3 | 0.74 (0.69, 0.78) | 30.3 | <.001 |
| Block 4 | 0.72 (0.68, 0.77) | 29.8 | <.001 |
| Block 1 \* SHAPS | -0.02 (-0.07, 0.02) | -0.99 | .32 |
| Block 2 \* SHAPS | -0.05 (-0.10, 0.00) | -2.13 | .050 |
| Block 3 \* SHAPS | -0.04 (-0.09, 0.01) | -1.61 | .13 |
| Block 4 \* SHAPS | -0.06 (-0.10, -0.01) | -2.34 | .04 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. Blocks (1-4) are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. SHAPS is modeled with standardized scores. SHAPS = Snaith-Hamilton Pleasure Questionnaire.

**Table S11.** *Music reinforcer, assessment phase*. Mixed-effects linear regression with PHQ-9 as predictor and DT% on target as the dependent variable (*observations* =3,454, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| (Intercept) | 0.53 (0.51, 0.55) | - | - |
| Assessment (post) | 0.03 (0.02, 0.05) | 5.18 | <.001 |
| PHQ-9 | 0.01 (-0.01, 0.04) | 1.02 | .31 |
| Assessment (post) \* PHQ-9 | -0.06 (-0.07, -0.04) | -8.51 | <.001 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. The intercept effect is modeled with an unstandardized B coefficient. Assessments are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. PHQ-9 is modeled with standardized scores. PHQ-9 = Patient Health Questionnaire 9.

**Table S12.** *Music reinforcer, assessment phase*. Mixed-effects linear regression with SHAPS as predictor and DT% on target as the dependent variable (*observations* =3,454, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| (Intercept) | 0.53 (0.51, 0.55) | - | - |
| Assessment (post) | 0.03 (0.02, 0.05) | 5.13 | <.001 |
| SHAPS | 0.00 (-0.02, 0.03) | 0.40 | .69 |
| Assessment (post) \* SHAPS | -0.05 (-0.06, -0.04) | -7.67 | <.001 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. The intercept effect is modeled with an unstandardized B coefficient. Assessments are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. SHAPS is modeled with standardized scores. SHAPS = Snaith-Hamilton Pleasure Scale.

**Table S13.** *White noise reinforcer, training phase*. Mixed-effects linear regression with PHQ-9 as predictor and DT% on target as the dependent variable (*observations* = 6,959, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| Block 1 | 0.60 (0.55, 0.65) | 24.3 | <.001 |
| Block 2 | 0.67 (0.62, 0.72) | 26.9 | <.001 |
| Block 3 | 0.71 (0.66, 0.76) | 28.6 | <.001 |
| Block 4 | 0.72 (0.67, 0.77) | 28.9 | <.001 |
| Block 1 \* PHQ-9 | 0.03 (-0.02, 0.08) | 1.34 | .26 |
| Block 2 \* PHQ-9 | 0.03 (-0.02, 0.08) | 1.16 | .26 |
| Block 3 \* PHQ-9 | 0.03 (-0.02, 0.08) | 1.13 | .26 |
| Block 4 \* PHQ-9 | 0.03 (-0.02, 0.08) | 1.21 | .26 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. Blocks (1-4) are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. PHQ-9 is modeled with standardized scores. PHQ-9 = Patient Health Questionnaire 9.

**Table S14.** *White noise reinforcer, training phase*. Mixed-effects linear regression with SHAPS as predictor and DT% on target as the dependent variable (*observations* = 6,959, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| Block 1 | 0.60 (0.55, 0.65) | 24.1 | <.001 |
| Block 2 | 0.67 (0.62, 0.72) | 26.7 | <.001 |
| Block 3 | 0.71 (0.66, 0.76) | 28.4 | <.001 |
| Block 4 | 0.72 (0.67, 0.77) | 28.7 | <.001 |
| Block 1 \* SHAPS | 0.04 (-0.01, 0.09) | 1.55 | .20 |
| Block 2 \* SHAPS | 0.02 (-0.03, 0.07) | 0.91 | .49 |
| Block 3 \* SHAPS | 0.01 (-0.04, 0.06) | 0.54 | .67 |
| Block 4 \* SHAPS | 0.01 (-0.04, 0.05) | 0.22 | .83 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. Blocks (1-4) are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. SHAPS is modeled with standardized scores. SHAPS = Snaith-Hamilton Pleasure Questionnaire.

**Table S15.** *White noise reinforcer, assessment phase*. Mixed-effects linear regression with PHQ-9 as predictor and DT% on target as the dependent variable (*observations* =3,452, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| (Intercept) | 0.51 (0.49, 0.53) | - | - |
| Assessment (post) | 0.08 (0.06, 0.09) | 11.2 | <.001 |
| PHQ-9 | 0.00 (-0.02, 0.03) | 0.43 | .67 |
| Assessment (post) \* PHQ-9 | 0.01 (0.00, 0.02) | 1.32 | .25 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. The intercept effect is modeled with an unstandardized B coefficient. Assessments are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. PHQ-9 is modeled with standardized scores. PHQ-9 = Patient Health Questionnaire 9.

**Table S16.** *White noise reinforcer, assessment phase*. Mixed-effects linear regression with SHAPS as predictor and DT% on target as the dependent variable (*observations* =3,452, *n* = 58)

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | *Β (95% CI)* | *t* | *p* |
| (Intercept) | 0.51 (0.49, 0.53) | - | - |
| Assessment (post) | 0.08 (0.06, 0.09) | 11.2 | <.001 |
| SHAPS | 0.00 (-0.02, 0.02) | 0.36 | .72 |
| Assessment (post) \* SHAPS | 0.01 (0.00, 0.03) | 1.95 | .07 |

Note. Corrected for multiple comparisons with the False Discovery Rate (FDR) correction. The intercept effect is modeled with an unstandardized B coefficient. Assessments are modeled as discrete (0/1) values and their effect is presented with unstandardized B scores. SHAPS is modeled with standardized scores. SHAPS = Snaith-Hamilton Pleasure Scale.