Supplemental Digital Content 2: Multi level Mixed-effects linear and logistic regression models using raw data (complete cases) and imputed data

**Table 1: The effect of GSP on depression cases 24 months after treatment (Raw data)**

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| --- | --- | --- |
|  | **Complete Case Sample** | **Imputed Sample** |
| **Independent Variable** | **Sample size** | **Odds ratio** | **95%CI** | **P-value** | **Sample size** | **Odds ratio** | **95%CI** | **P-value** |
| **Baseline Intervention difference in depression cases**GHEGSP | 542561 | 10.926 | 10.422 - 2.032 | 0.849  | 562578 | 10.926 | 0.451-1.902 | 0.836 |
| **Time period after treatment**2 months6 months 12 months18 months 24 months | 1074102097410581013 | 0.009 0.048 0.110 0.035 0.036  | 0.006 - 0.0130.033 - 0.0680.077 - 0.1570.025 - 0.0510.025 - 0.053 | 0.000 0.000 0.000 0.000 0.000  | 11401140114011401140 | 0.0020.0170.0230.0160.013 | 0.001 -0.0030.011 -0.0270.014 -0.0360.010 -0.0260.008 -0.022 | 0.0000.0000.0000.0000.000 |
| **Interaction between time and intervention arms**Intervention X time period (2 months)Intervention X time period (6 months)Intervention X time period (12 months)Intervention X time period (18 months)Intervention X time period (24 months) | 1074102097410581013 | 0.498 0.088 0.051 0.096 0.129  | 0.269 - 0.9220.049 - 0.1580.029 - 0.0910.052 - 0.1760.072 - 0.232 | 0.0260.000 0.000 0.000 0.000  | 11401140114011401140 | 0.2470.0130.0110.0130.002 | 0.104 -0.5870.004 -0.0350.004 -0.0290.004 -0.0360.0002 -0.018 | 0.0020.0000.0000.0000.000 |
| **Baseline Covariates** |  |  |  |  |  |  |  |  |
| Function score | 1119 | 0.949  | 0.907 - 0.994 | 0.027  | 1140 | 0.974  | 0.926 - 1.023 | 0.302 |
| Employment statusUnemployedEmployedPeasant farmer | 405113622 | 11.265 1.120  | 10.893 - 1.7950.854 - 1.468 | 0.1870.412  | 405113622 | 10.6710.908 | 10.449 - 1.0020.671 - 1.230 | 0.0510.536 |
| Marital statusSingleMarriedSeparatedWidow | 1518618737 | 11.054 1.439 1.256  | 10.798 - 1.3930.947 - 2.1850.812 - 1.944 | 0.7090.088 0.306  | 1518618737 | 11.4061.5091.863 | 11.042 - 1.8900.941 - 2.4201.107 - 3.136 | 0.0260.0870.019 |
|  ART Adherence | 1099 | 0.994  | 0.991 - 0.998 | 0.007 | 1140 | 0.997 | 0.993 – 1.002 | 0.367 |

**Abbreviations:** CI, confidence interval

**Table 2: The effect of GSP on function scores 24 months after treatment**

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|  | **Complete Case Sample** | **Imputed Sample** |
| **Independent Variable** | **Sample size** | **β coeffient** | **95%CI** | **P-value** | **Sample size** | **β coeffient** | **95%CI** | **P-value** |
| **Baseline Intervention difference in function scores**GHEGSP | 555564 | 1-1.148  | 1-1.679 - ̄0.617 | 0.000  | 562578 | 1-1.159 | -1.808 - 0.511 | 0.000 |
| **Time period after treatment**2 months6 months 12 months18 months 24 months | 10781012 97310561015 | 3.550 1.206 0.3650.609 0.987  | 3.311 - 3.7900.958 - 1.4520.113 - 0.6170.365 - 0.8540.739 - 1.235 | 0.000 0.000 0.004 0.000 0.000  | 11401140114011401140 | 3.5771.3130.4080.6321.077 | 3.334 - 3.8191.057 - 1.5690.141 - 0.6760.389 - 0.8750.814 - 1.340 | 0.000 0.000 0.0030.000 0.000  |
| **Interaction between time and intervention arms**Intervention X time period (2 months)Intervention X time period (6 months)Intervention X time period (12 months)Intervention X time period (18 months)Intervention X time period (24 months) | 10781012 97310561015 | 1.569 4.234 5.110 4.859 4.589  | 1.232 - 1.9073.890 - 4.5774.763 - 5.4584.518 - 5.1994.246 - 4.933 | 0.000 0.000 0.000 0.000 0.000  | 11401140114011401140 | 1.5104.1005.0764.8274.499 | 1.165 - 1.8553.758 - 4.4434.712 - 5.4394.485 - 5.1684.134 - 4.864 | 0.000 0.000 0.0000.000 0.000  |
| **Baseline Covariates** |
| Employment statusUnemployedEmployedPeasant farmer | 405113622 | 10.082 -0.026  | 1-0.133 - 0.296-0.191 - 0.138 | 0.456 0.752  | 405113622 | 10.1050.006 | -0.093 - 0.305-0.151-0.164 | 0.2980.935 |
| Marital statusSingleMarriedSeparatedWidow | 1518618737 | 1-0.094 -0.174 -0.319  | 1-0.261 - 0.072-0.425 - 0.076-0.575 - ̄ 0.065 | 0.267 0.173 0.014  | 1518618737 | 1-0.123-0.157 -0.282 | -0.291-0.044-0.403 - 0.087-0.530 - -0.034 | 0.1470.2070.025 |
| Baseline ART Adherence | 1099 | 0.001  | -0.001 - 0.004 | 0.000  | 1140 | 0.0005 | -0.002-0.003 | 0.697 |

**Table 3: The effect of GSP on adherence rates 24 months after treatment**

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|  | **Complete Case Sample** | **Imputed Sample** |
| **Independent Variable** | **Sample size** | **Odds ratio** | **95%CI** | **P-value** | **Sample size** | **Odds ratio** | **95%CI** | **P-value** |
| **Baseline Intervention difference in function scores**GHEGSP | 540559 | 10.52 | 10.22 - ̄1.23 | 0.318 | 562578 | 10.53 | 0.23–1.21 | 0.131 |
| **Time period after treatment**6 months 12 months18 months 24 months | 1018 9711054 996 | 16.903.821.775.04 | 8.01 - 35.672.45–5.941.22–2.563.12- 8.13 | 0.000 0.0000.0020.000  | 1140114011401140 | 16.383.751.774.93 | 7.76–34.572.42–5.821.23–2.553.06–7.94 | 0.000 0.0000.0020.000  |
| **Interaction between time and intervention arms**Intervention X time period (6 months)Intervention X time period (12 months)Intervention X time period (18 months)Intervention X time period (24 months) | 1018 9711054 996 | 2.2610.1870.9024.97 | 0.77 – 6.624.16–24.8819.75–254.416.72–92.77 | 0.1280.000 0.000 0.000  | 1140114011401140 | 1.877.0158.1420.88 | 0.67 – 5.253.10–18.8116.64–203.165.78–75.33 | 0.2310.0000.000 0.000  |
| **Baseline Covariates** |
| Employment statusUnemployedEmployedPeasant farmer | 405113622 | 11.060.75 | 10.62- 1.850.51–1.09 | 0.8140.140 | 405113622 | 11.020.71 | 0.62–1.670.50 – 0.99 | 0.9490.047 |
| Marital statusSingleMarriedSeparatedWidow | 1518618737 | 10.850.921.36 | 10.56–1.280.48–1.750.67 - 2.77 | 0.450 0.7950.385 | 1518618737 | 10.810.811.14 | 0.56 – 1.170.43–1.500.58–2.23 | 0.2720.4980.697 |
| Baseline Function scores | 1099 | 0.98 | 0.92–1.05 | 0.605 | 1140 | 0.99 | 0.94-1.06 | 0.957 |

**Table 3: The effect of GSP on viral suppression 24 months after treatment**

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|  | **Complete Case Sample** | **Imputed Sample** |
| **Independent Variable** | **Sample size** | **Odds ratio** | **95%CI** | **P-value** | **Sample size** | **Odds ratio** | **95%CI** | **P-value** |
| **Baseline Intervention difference in function scores**GHEGSP | 418440 | 10.82 | 10.32 - ̄2.13 | 0.697 | 562578 | 11.33 | 0.58–3.05 | 0.492 |
| **Time period after treatment**12 months24 months |  958 993 | 1.132.98 | 0.64 - 1.991.45–6.14 | 0.6560.003 | 11401140 | 11.4429.36 | 7.38–17.7215.60–55.24 | 0.000 0.000 |
| **Interaction between time and intervention arms**Intervention X time period (12 months)Intervention X time period (24 months) |  958 993 | 1.565.54 | 0.71–3.474.246 - 4.933 | 0.2710.010  | 11401140 | 1.083.38 | 0.57 –2.021.02–11.20 | 0.8170.046 |
| **Baseline Covariates** |
| Employment statusUnemployedEmployedPeasant farmer | 405113622 | 10.610.73 | 10.30–1.220.41–1.28 | 0.160 0.840 | 405113622 | 11.551.19 | 0.93–2.590.85 – 1.68 | 0.0920.298 |
| Marital statusSingleMarriedSeparatedWidow | 1518618737 | 11.491.201.42 | 10.87–2.540.50–2.870.60– 3.35 | 0.1400.6790.419 | 1518618737 | 11.281.091.45 | 0.89 – 1.830.60–1.970.65– 2.01 | 0.1750.7720.632 |
| Baseline Function scores | 1119 | 0.93 | 0.85-1.02 | 0.126 | 1140 | 1.01 | 0.95 – 1.08 | 0.703 |
| Baseline ART Adherence | 1099 | 0.99 | 0.98–1.01 | 0.709 | 1140 | 1.01 | 0.82-1.23 | 0.952 |