Online Supplement for “Marriage and reductions in men’s alcohol, tobacco, and cannabis use”

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**Supplemental Table 1**. Substance use as a function of age and marital status.

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | Single | Married | Divorced/Separated |
|  | Age | *N* | *M* | *SD* | *N* | *M* | *SD* | *N* | *M* | *SD* |
| Alcohol | 18 | 1714 | 329 | 664 | 74 | 416 | 915 | 2 |  1344 | 2304 |
|  | 19 | 1594 | 411  |  765 | 186 |  440 | 833 | 10 |  1312 | 1678 |
|  | 20 | 1481 | 479 | 924 | 289 | 493 | 1129 | 20 |  848 | 1310 |
|  | 21 | 1296 | 600 | 1040 | 450 | 493 | 1133 | 44  |  1092 | 1765 |
|  | 22 | 1153 | 576 | 1092 | 578 | 457 | 1044 | 59 |  1160 | 2629 |
|  | 23 | 1006 | 506 | 1017 | 700 |  391 | 941 | 84 |  1027 | 2318 |
|  | 24 | 888 |  503 | 1084 | 799 | 327 | 734 | 102 | 816 | 1368 |
|  | 25 | 760 | 451 | 778 | 888 | 342 |  774 | 130 | 651 | 1039 |
|  | 26 | 665 | 399 | 690 | 937 |  322 | 750 | 159 | 616 | 1007 |
|  | 27 | 536 | 382 | 700 | 1010 | 295 | 673 | 181 | 640 | 1054 |
|  | 28 | 447 |  415 | 778 | 1051 | 286 | 671 | 184 | 754 | 1020 |
|  | 29 | 372 | 395 | 1047 | 1068 | 294 | 770 | 176 |  777 | 1490 |
|  | 30 | 311 | 457 | 1022 | 1074 | 307 | 983 | 175 | 693 | 1284 |
|  |  |  |  |  |  |  |  |  |  |  |
| Tobacco | 18 | 1714 |  1981 |  3481 | 74 | 4824 | 5227 | 2 | 12775 | 12905 |
|  | 19 | 1594 |  2287 |  3837 | 186 | 4154 | 5028 | 10 | 8760 | 6484 |
|  | 20 | 1481 |  2449 | 4006 | 289 | 4096 | 4965 | 20 | 8776 | 8123 |
|  | 21 | 1296 |  2452 |  4113 | 450 | 4332 | 5251 | 44 | 6892 |  7299 |
|  | 22 | 1153 |  2470 | 4081 | 578 | 4209 | 5413 | 59 | 5778 | 6257 |
|  | 23 | 1006 |  2524 | 4150 | 700 | 3817 | 5187 | 84 | 6397 | 6872 |
|  | 24 | 888 |  2387 | 4077 | 799 | 3624 | 5110 | 102 | 6201 | 6694 |
|  | 25 | 760  |  2435 | 4524 | 888 | 3631 | 5204 | 130 | 5416 | 7005 |
|  | 26 | 665 | 2405 | 4259 | 937 | 3374 | 5133 | 159 | 5220 | 6423 |
|  | 27 | 536 | 2384 | 4310 | 1010 | 3163 | 4911 | 181 | 5069 | 6481 |
|  | 28 | 447 | 2399 | 4318 | 1051 | 3161 | 4951 | 184 | 5336 | 6541 |
|  | 29 | 372 | 2675 | 4642 | 1068 | 3141 | 4930 | 176 | 5214 | 6661 |
|  | 30 | 311 | 2999 | 4925 | 1074 | 3240 | 5154 | 175 | 4820 | 6692 |
|  |  |  |  |  |  |  |  |  |  |  |
| Cannabis | 18 | 1714 | 49 | 236 | 74 | 34 | 137 | 2 |  0 |  0 |
|  | 19 | 1594 | 65 | 395 | 186 | 34 | 134 | 10 | 336 | 545 |
|  | 20 | 1481 | 75 | 441 | 289 | 31 | 119 | 20 | 268 | 555 |
|  | 21 | 1296 | 73 | 374 | 450 | 47 | 195 | 44 | 287 | 707 |
|  | 22 | 1153 | 88 | 522 | 578 | 38 | 220 | 59 | 341 | 1067 |
|  | 23 | 1006 | 81 | 403 | 700 | 41 | 324 | 84 | 145 | 468 |
|  | 24 | 888 | 69 | 385 | 799 | 42 | 327 | 102 | 140 | 586 |
|  | 25 | 760 | 53 | 282 | 888 | 41 | 272 | 130 |  82 | 316 |
|  | 26 | 665 | 39 | 198 | 937 | 33 | 241 | 159 |  88 | 318 |
|  | 27 | 536 | 44 | 224 | 1010 | 30 | 231 | 181 |  76 | 296 |
|  | 28 | 447 | 51 | 248 | 1051 | 21 | 144 | 184 |  75 | 303 |
|  | 29 | 372 | 51 | 252 | 1068 | 17 | 117 | 176 | 118 | 418 |
|  | 30 | 311 | 62 | 313 | 1074 | 16 | 104 | 175 | 100 | 374 |

*Abbreviations.* *M*, mean; and *SD*, standard deviation.

**Supplemental Table 2.** Associations between substance use and marital status in the overall sample (between-person effects).

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | Marital Status | B [95% CI] | p |
| Alcohol | Single | 0.14 [0.12, 0.16] | <0.01 |
| Married (Ref.) | - | - |
| Divorced/Separated | 0.26 [0.22, 0.31] | <0.01 |
|  |  |  |  |
| Tobacco | Single | 0.01 [-0.002, 0.03] | 0.10 |
| Married (Ref.) | - | - |
| Divorced/Separated | 0.11 [0.07, 0.14] | <0.01 |
|  |  |  |  |
| Cannabis | Single | 0.09 [0.07, 0.11] | <0.01 |
| Married (Ref.) | - | - |
| Divorced/Separated | 0.19 [0.14, 0.23] | <0.01 |
| *Note.* Ref denotes reference group.  |

**Supplemental Table 3.** Associations between substance use and marital status in twins discordant for marital status (co-twin comparisons).

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | Marital Status | B [95% CI] | p |
| Alcohol | Single | 0.25 [0.15, 0.35] | <0.01 |
| Married (Ref.) | - | - |
| Divorced/Separated | 0.54 [0.4, 0.68] | <0.01 |
|  |  |  |  |
| Tobacco | Single | 0.11 [0.01, 0.21] | <0.01 |
| Married (Ref.) | - | - |
| Divorced/Separated | 0.29 [0.16, 0.43] | <0.01 |
|  |  |  |  |
| Cannabis | Single | 0.32 [0.23, 0.42] | <0.01 |
| Married (Ref.) | - | - |
| Divorced/Separated | 0.36 [0.22, 0.49] | <0.01 |
| *Note.* Ref denotes reference group.  |

**Supplemental Table 4.** Associations between substance use and marital status within persons.

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | Marital Status | B [95% CI] | p |
| Alcohol | Single | 0.13 [0.12, 0.15] | <0.01 |
| Married (Ref.) | - | - |
| Divorced/Separated | 0.25 [0.21, 0.29] | <0.01 |
|  |  |  |  |
| Tobacco | Single | 0.01 [0.00, 0.03] | 0.05 |
| Married (Ref.) | - | - |
| Divorced/Separated | 0.1 [0.07, 0.14] | <0.01 |
|  |  |  |  |
| Cannabis | Single | 0.09 [0.07, 0.1] | <0.01 |
| Married (Ref.) | - | - |
| Divorced/Separated | 0.17 [0.13, 0.21] | <0.01 |
| *Note.* Ref denotes reference group.  |

**Supplemental Table 5.** Mean substance use in the years leading up to and following marriage in the overall sample (between-person effects).

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | Year relative to marriage | Mean [95% CI] | Pairwise difference(p < 0.01) |
| Alcohol | -3 | 0.10 [0.04, 0.17] | 0 1 2 3 |
| -2 | 0.09 [0.03, 0.15] | 0 1 2 3  |
| -1 | 0.05 [-0.01, 0.11] | 0 1 2 3 |
| 0 | -0.02 [-0.09, 0.04] | -3 -2 -1 1 2 3 |
| 1 | -0.10 [-0.16, -0.04] | -3 -2 -1 0 |
| 2 | -0.12 [-0.18, -0.06] | -3 -2 -1 0 |
| 3 | -0.14 [-0.2, -0.07] | -3 -2 -1 0 |
|  |  |  |  |
| Tobacco | -3 | -0.004 [-0.06, 0.06] | none |
| -2 | 0.002 [-0.06, 0.07] | none |
| -1 | 0.002 [-0.06, 0.07] | none |
| 0 | 0.01 [-0.05, 0.08] | 3 |
| 1 | -0.03 [-0.09, 0.04] | none |
| 2 | -0.03 [-0.09, 0.03] | none |
| 3 | -0.04 [-0.1, 0.03] | 0 |
|  |  |  |  |
| Cannabis | -3 | -0.02 [-0.08, 0.04] | 0 1 2 3 |
| -2 | -0.02 [-0.08, 0.03] | 0 1 2 3 |
| -1 | -0.04 [-0.1, 0.02] | 1 2 3 |
| 0 | -0.09 [-0.15, -0.03] | -3 -2 2  |
| 1 | -0.15 [-0.2, -0.09] | -3 -2 -1 |
| 2 | -0.15 [-0.21, -0.09] | -3 -2 -1 0 |
| 3 | -0.14 [-0.2, -0.08] | -3 -2 -1 |

**Supplemental Table 6.** Associations between substance use and marital status (single versus married) across the transition to marriage in twin pairs discordant for marital status (co-twin comparisons).

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | Year relative to marriage | B [95% CI] | p |
| Alcohol | -1 | 0.14 [-0.31, 0.38] | 0.14 |
| 0 | 0.27 [0.08, 0.46] | 0.01 |
| 1 | 0.35 [0.15, 0.54] | <0.01 |
|  |  |  |  |
| Tobacco | -1 | 0.01 [-0.18, 0.19] | 0.93 |
| 0 | 0.06 [-0.12, 0.24] | 0.52 |
| 1 | 0.07 [-0.10, 0.25] | 0.42 |
|  |  |  |  |
| Cannabis | -1 | 0.15 [-0.01, 0.32] | 0.07 |
| 0 | 0.32 [0.14, 0.50] | <0.01 |
| 1 | 0.66 [0.43, 0.90] | <0.01 |

**Supplemental Table 7.** Substance use in the years leading up to and following marriage within persons (i.e., relative to year of marriage).

|  |  |  |  |
| --- | --- | --- | --- |
| Substance | Year relative to marriage | Mean [95% CI] | Significance relative to Year 0 |
| Alcohol | -3 | 0.13 [0.09, 0.17] | <0.01 |
| -2 | 0.11 [0.08, 0.15] | <0.01 |
| -1 | 0.07 [0.03, 0.11] | <0.01 |
| 0 | Ref |  |
| 1 | -0.07 [-0.11, -0.03] | <0.01 |
| 2 | -0.09 [-0.14, -0.05] | <0.01 |
| 3 | -0.11 [-0.16, -0.07] | <0.01 |
|  |  |  |  |
| Tobacco | -3 | -0.01 [-0.04, 0.02] | 0.59 |
| -2 | -0.01 [-0.04, 0.02] | 0.60 |
| -1 | -0.01 [-0.04, 0.02] | 0.59 |
| 0 | Ref |  |
| 1 | -0.04 [-0.07, -0.01] | 0.01 |
| 2 | -0.04 [-0.07, -0.01] | 0.01 |
| 3 | -0.05 [-0.08, -0.02] | 0 |
|  |  |  |  |
| Cannabis | -3 | 0.07 [0.04, 0.11] | <0.01 |
| -2 | 0.07 [0.03, 0.1] | <0.01 |
| -1 | 0.05 [0.01, 0.09] | <0.01 |
| 0 | Ref |  |
| 1 | -0.05 [-0.09, -0.02] | <0.01 |
| 2 | -0.06 [-0.1, -0.02] | <0.01 |
| 3 | -0.05 [-0.09, -0.01] | 0.03 |
| *Note.* Ref denotes reference group. |