SUPPLEMENTARY MATERIALS

What biological and self-report measures of cannabis use predict cannabis dependency and acute psychotic-like effects?

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Supplementary Table 1: Self-report and biological indices of cannabinoid exposure, and their associations with cannabis dependence (Severity of Dependence Scale; SDS and DSM-IV-TR) and cannabis-induced psychotic symptoms (Psychotomimetic States Inventory; PSI and Brief Psychiatric Rating Scale; BPRS)

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| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | |  | **Cannabis Dependence** | | **Cannabis-induced psychotic symptoms** | |
|  | **N** | | **Mean (SD)** | **SDS** | **DSM IV-TR** | **PSI** | **BPRS** |
| SDS (No/Yes) | 412 | | 43.7% yes | - | **0.381\*\*\***b | -0.036a | -0.023 a |
| DSM IV criteria (No/Yes) | 411 | | 48.4% yes |  | - | -0.060a | -0.068 a |
| Change PSI | 384 | | 8.65 (16.83) |  |  | - | **0.131\*\***c |
| Change BPRS | 402 | | 3.91 (9.97) |  |  |  | - |
| Age | 416 | | 20.56 (1.67) | 0.077a | -0.004a | -0.032c | **-0.127\***c |
| Sex (M/F) | 418 | | 113 Female | -0.023b | -0.020b | 0.019 a | 0.224a |
| THC % in cannabis | 366 | | 9.60 (4.69) | -0.010 a | -0.049a | -0.083c | -0.028c |
| CBD % in cannabis | 366 | | 0.82 (1.66) | 0.009 a | 0.053a | 0.037c | -0.067c |
| Urine THC-COOH/creatinine | 348 | | 122.41 (253.21) | **0.350\*\*\***a | r=0.228\*\*\* | **-0.196\*\*\***c | -0.078c |
| Hair-THC (no/yes) | 412 | | 55.7% yes | **0.206\*\*\***b | 0.094b | -0.094 a | **-0.135\*\*** a |
| Hair-CBD (no/yes) | 412 | | 33.5% yes | **0.178\*\*\***b | 0.074b | -0.071 a | **-0.123\*** a |
| Hair-CBN (no/yes) | 344 | | 48.1% yes | **0.215\*\*\***b | 0.030b | **-0.102\*** | **-0.116\*** a |
| Hair-THC-COOH (no/yes) | 344 | | 25.6% yes | **0.170\*\*\***b | **0.136\*\***b | -0.068 a | -0.087 a |
| Hair-THC-OH (no/yes) | 344 | | 24.9% yes | **0.135\*\***b | 0.069b | -0.021 a | -0.072 a |
| Age of first use (years) | 413 | | 14.94 (2.05) | -0.033a | **-0.122\***a | **0.206\*\*\*c** | 0.032c |
| Last used (days) | 401 | | 4.20 (7.24) | **-0.244\*\*\***a | -0.079a | 0.162\*\***d** | 0.069d |
| Years Used (years) | 401 | | 4.88 (2.36) | 0.038 a | -0.093a | **-0.148\*\***c | -0.039c |
| Days per month (days) | 398 | | 16.87 (10.95) | **0.486\*\*\***a | **0.431\*\*\*** a | **-0.141\*\***d | -0.049d |
| Time to smoke 3.5g (days) | 392 | | 10.31 (17.25) | **-0.199\*\*\***a | **-0.208\*\*\***a | **0.143\*\***d | -0.023d |
| Potency Preference (No/Yes) | 413 | | 39% yes | **0.212\*\*\***b | **0.165\*\*\***b | -0.076 a | -0.073 a |
| Money spent per week on cannabis(£) | 411 | | 20.26 (22.64) | **0.412\*\*\***a | **0.345\*\*\***a | **-0.144\*\***d | -0.020d |
| *\* p≤ .05, \*\* p≤ .01, \*\*\* p≤ .001*  a point biserial correlation, bPhi correlation coefficient, C Peasons correlation coefficient d Spearmans rho | |  |  |  |  |  |  |

Supplementary Table 2: Univariate Bayesian Information Criterion (BIC) values ranked in order from lowest to highest.

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| --- | --- | --- | --- | --- | --- |
| SDS | BIC | DSM-IV-TR | BIC | PSI | BIC |
| THC-COOH/creatinine | 414.686 | THC-COOH/creatinine | 465.757 | THC-COOH/creatinine | 2735.501 |
| Days per month (days) | 456.812 | Days per month (days) | 484.628 | Age of first cannabis use (years) | 3258.232 |
| Money spent per week on cannabis (£) | 490.646 | Money spent per week on cannabis (£) | 521.664 |  |  |
| Last used (days) | 511.722 | Time to smoke 3.5g (days) | 533.635 |  |  |
| Time to smoke 3.5g (days) | 529.820 | Potency Preference (No/Yes) | 570.152 |  |  |
| Hair-CBN (No/Yes) | 557.468 |  |  |  |  |
| Potency Preference (No/Yes) | 558.107 |  |  |  |  |
| Hair-THC (No/Yes) | 558.858 |  |  |  |  |
| Hair-CBD (No/Yes) | 563.581 |  |  |  |  |
| Hair-THC-COOH (No/Yes) | 564.838 |  |  |  |  |
| Hair-THC-OH (No/Yes) | 569.144 |  |  |  |  |

Supplementary table 3: Associations between self-report and biological indices of cannabinoid exposure.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Age | Sex | THC % in cannabis | CBD % in cannabis | THC:  creatinine ratio | Hair-THC | Hair-CBD | Hair-CBN | Hair-THC-COOH | Hair-THC-OH | Age of first use | Last used | Years Used | Days per month | Time to smoke 3.5g | Potency Preference | Money spent |
| Age | 1.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sex (M/F) | -.033  a | 1.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| THC % in cannabis | .065  c | -.066a | 1.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| CBD % in cannabis | .116\*  c | -.037a | -.036  c | 1.000 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| THC:creatinine ratio | .043  c | -.005a | .139\*  c | -.058  c | 1.000 |  |  |  |  |  |  |  |  |  |  |  |  |
| Hair-THC (no/yes) | .071  a | -.043b | .271\*\*\*a | -.014  a | .238\*\*\*  a | 1.000 |  |  |  |  |  |  |  |  |  |  |  |
| Hair-CBD (no/yes) | .069  a | -.055b | .165\*\*  a | .076  a | .189\*\*\*  a | .622\*\*\*  b | 1.000 |  |  |  |  |  |  |  |  |  |  |
| Hair-CBN (no/yes) | .093  a | -.036b | .236\*\*\*a | .051  a | .196\*\*\*  a | .800\*\*\*  b | .727\*\*\*b | 1.000 |  |  |  |  |  |  |  |  |  |
| Hair-THC-COOH (no/yes) | .013  a | -.048b | .103  a | -.040  a | .262\*\*\*  a | .523\*\*\*  b | .617\*\*\*b | .489\*\*\*b | 1.000 |  |  |  |  |  |  |  |  |
| Hair-THC-OH (no/yes) | .032  a | -.014b | .061  a | .013  a | .251\*\*\*  a | .513\*\*\*  b | .659\*\*\*b | .565\*\*\*b | .728\*\*\*b | 1.000 |  |  |  |  |  |  |  |
| Age of first use (years) | .183\*\*\*  c | .039  a | .081  c | -.025  c | -.110\*  c | .007a | .009  a | -.013  a | -.003  a | .011  a | 1.000 |  |  |  |  |  |  |
| Last used (days) | -.007  d | .014  a | .060  d | .081  d | -.570\*\*\*d | -.062a | -.053  a | -.810  a | .025  a | .013  a | .143\*\*  d | 1.000 |  |  |  |  |  |
| Years Used (years) | .453\*\*\*  c | -.072  a | -.087  a | .116\*  c | .104  c | .042  a | .074  a | .070  a | -.004  a | .020  a | -.568\*\*\*c | -.065d | 1.000 |  |  |  |  |
| Days per month (days) | -.043  d | -.006  a | -.065  d | -.036  d | .683\*\*\*  d | .234\*\*\*  a | .194\*\*\*a | .227\*\*\*a | .225\*\*\*a | .188\*\*\*a | -.231\*\*\*d | -.666\*\*\*d | .099\*  d | 1.000 |  |  |  |
| Time to smoke 3.5g (days) | .264\*\*\*d | .091  a | -.047  d | -.058  d | -.420\*\*\*d | -.212\*\*\*a | -.124\*  a | -.153\*\*  a | -.107\*  a | -.063a | .290\*\*\*  d | .319\*\*\*  d | 0.014  d | -.454\*\*\*d | 1.000 |  |  |
| Potency Preference (No/Yes) | -.008  a | -.021b | .130\*  a | -.029  a | .317\*\*\*  a | .137\*\*  b | .101\*  b | .171\*\*\*b | .113\*  b | .204\*\*\*b | -.148\*\*  a | -.106\*  a | .091  a | .300\*\*\*  a | -.196\*\*\*a | 1.000 |  |
| Money spent per week on cannabis (£) | -.061  d | -.046a | .042  d | -.036  d | .656\*\*\*  d | .242\*\*\*  a | .176\*\*\*a | .229\*\*\*a | .274\*\*\*a | .192\*\*\*a | -.205\*\*\*a | -.567\*\*\*d | .072  d | .788\*\*\*  d | -.564\*\*\*d | .359\*\*\*  a | 1.000 |

*\* p≤ .05, \*\* p≤ .01, \*\*\* p≤ .001*

a point biserial correlation, bPhi correlation C Peasons correlation d Spearmans rho