## Supplement Table 1 – Combinations of self-directedness and cooperativeness score categories and the risk of problematic drug and alcohol use (categories with n≤10 are not shown)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Problematic alcohol use (AUDIT > 15)** | | | | | | | | | | |  |  |  |
|  | | **Self- directedness score category** | | | | | | | | |  |  |  |
|  | | **Low (< mean -1 SD)** | | | **Mid (mean ± 1 SD)** | | | **High (> mean +1 SD)** | | |
| **Cooperativeness** | n (%) | | | OR (95% CI) | n (%) | | OR (95% CI) | n (%) | | OR (95% CI) |
| Low (< mean -1 SD) | | 43 / 535 (8) | **5.6 (3.8-8.4)** | | 19 / 473 (4) | | **2.7 (1.6-4.5)** | - | - | |
| Mid (mean ± 1 SD) | | 26 / 505 (5) | **3.5 (2.2-5.6)** | | 63/4116 (1.5) | | reference | 4 / 399(1) | 0.7 (0.2 – 1.8) | |
| High (> mean +1 SD) | | - | - | | 5/580 (1) | | 0.6 (0.22– 1.4) | 3 /297 (1) | 0.7 (0.2 – 2.1) | |
| **Problematic drug use (DUDIT >7)** | | | | | | |  |  |  | |
|  | | **Self-directedness score category** | | | | |  |  |  | |
|  | | **Low (< mean -1 SD)** | | | **Mid (mean ± 1 SD)** | | | **High (> mean +1 SD)** | | |
| **Cooperativeness** | | DUDIT >7 /n (%) | OR (95% CI) | | DUDIT >7 /n (%) | | OR (95% CI) | DUDIT >7 /n (%) | OR (95% CI) | |
| Low (< mean -1 SD) | | 24/535 (4) | **7.4 (4.2-13.0** | | 13/473 (3) | **4.4 (2.3-8.7)** | | - | - | |
| Mid (mean ± 1 SD) | | 13/505 (3) | **4.2 (2.1-8.1)** | | 26/4116 (1) | reference | | 3/399 (1) | 1.19 (0.36-4.0) | |
| High (> mean +1 SD) | | - | - | | 3/ 580 (1) | 0.8 (0.2-2.7) | | 3/297 (1) | 1.61 (0.48-5.3) | |
|  | |  |  | |  | |  |  | |  |

## Supplement table 2. Sensitivity analysis using only one of two twins in a twin-couple (n=4224)

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | **AUDIT >15** | | | | | | | | **DUDIT >7** | | | | | | |
| N | | | | | n (%) | | **OR (95%-CI)** | | | | n (%) | | | **OR (95%-CI)** | | | |
| **Self-directedness** | | | | | | | | | | | | | | | |  | | |
|  | Low (< mean -1 SD) | 658 | | | | 46 (7.0) | 3.7 (2.5-5.5, **p<0.001**) | | | 27 (4.1) | | | 5.6 (3.2-9.7);<**0.001** | | | | |
|  | Mid (mean ± 1 SD) | 3,149 | | | | 62 (2.0) | Ref. | | | 24 (0.8) | | | Ref. | | | |  |
|  | High (> mean +1 SD) | 417 | | | | 6 (1.4) | 1.1 (0.4-2.7, p=0.823) | | | 3 (0.7) | | | 0.9 (0.3-3.1);0.925 | | | | |
| **Cooperativeness** | | | |  | | | |  |  | | |  | | |
|  | Low (< mean -1 SD) | 650 | | | | 42 (6.4) | 3.1 (2.1-4.6, **p<0.001**) | | | 29 (4.5%) | | | 6.4 (3.7-11.3, **p<0.001**) | | | | |
|  | Mid (mean ± 1 SD) | 3050 | | | | 67 (2.2) | Ref. | | | 22 (0.7%) | | | Ref. | | | |  |
|  | High (> mean +1 SD) | 524 | | | | 5 (0.9) | 0.4 (0.2-1.01, p=0.069) | | | 3 (0.6%) | | | 0.8 (0.2-2.7), p=0.706) | | | | |