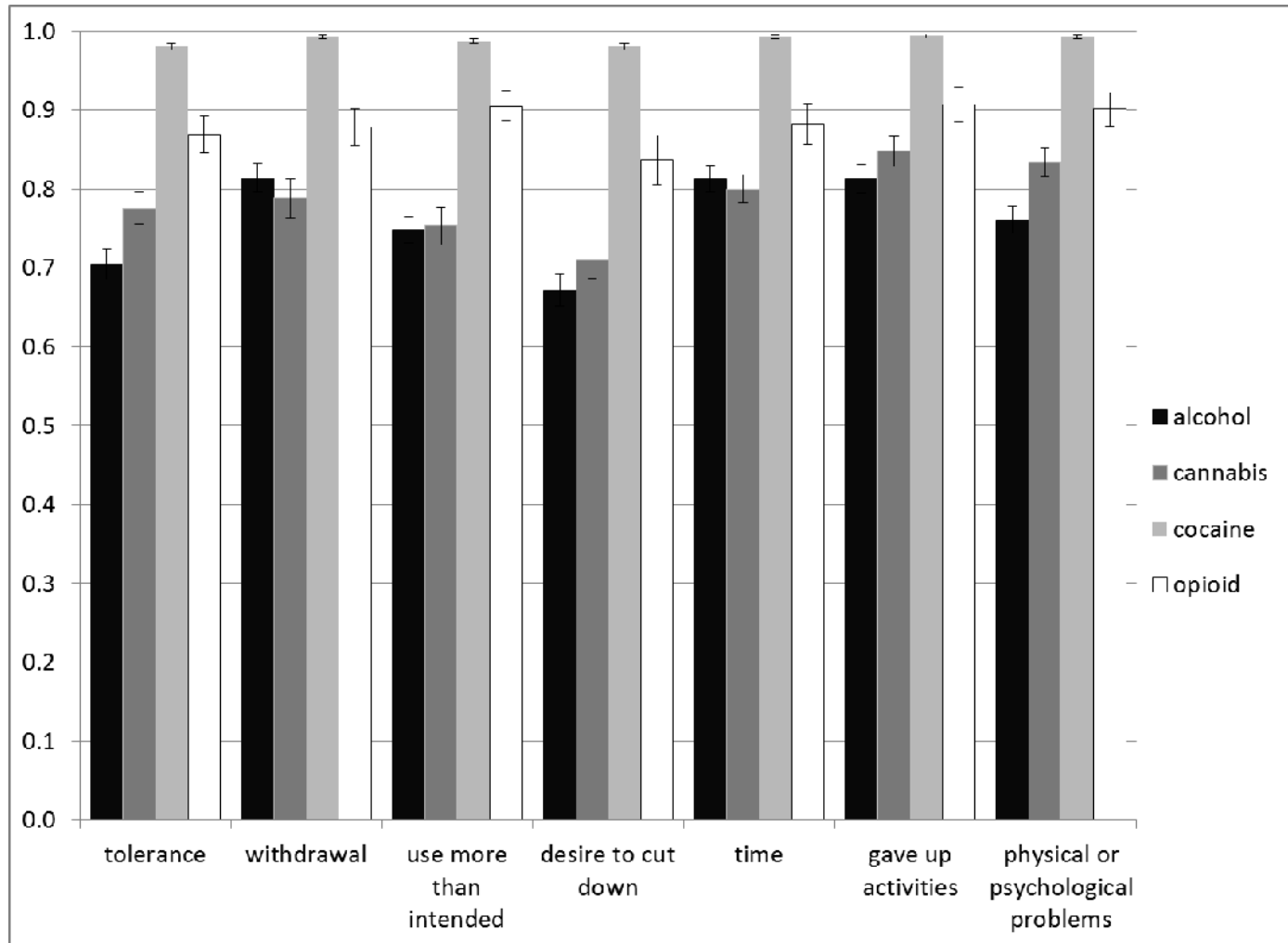


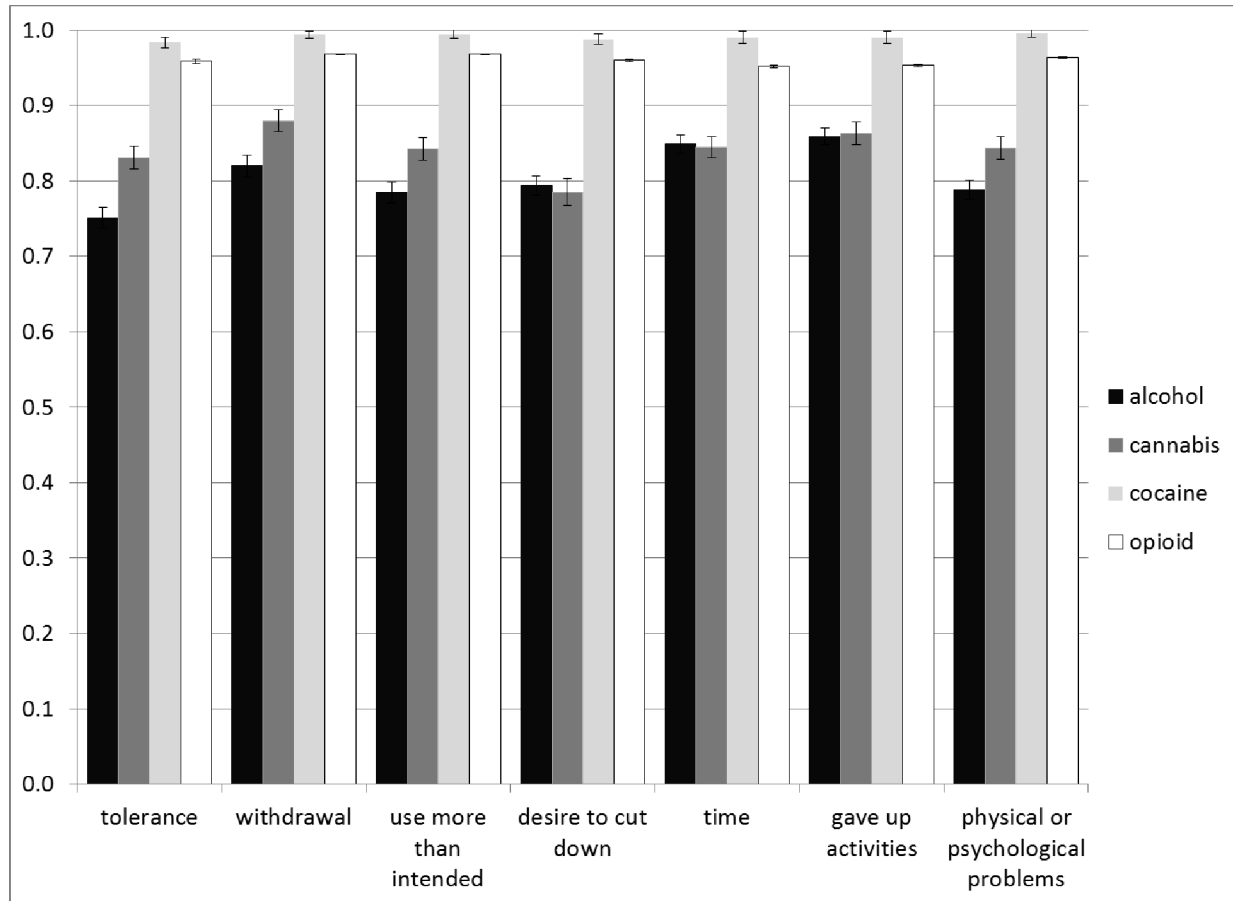
Supplemental Figure 1: Confirmatory factor loadings:

A. COGA sample



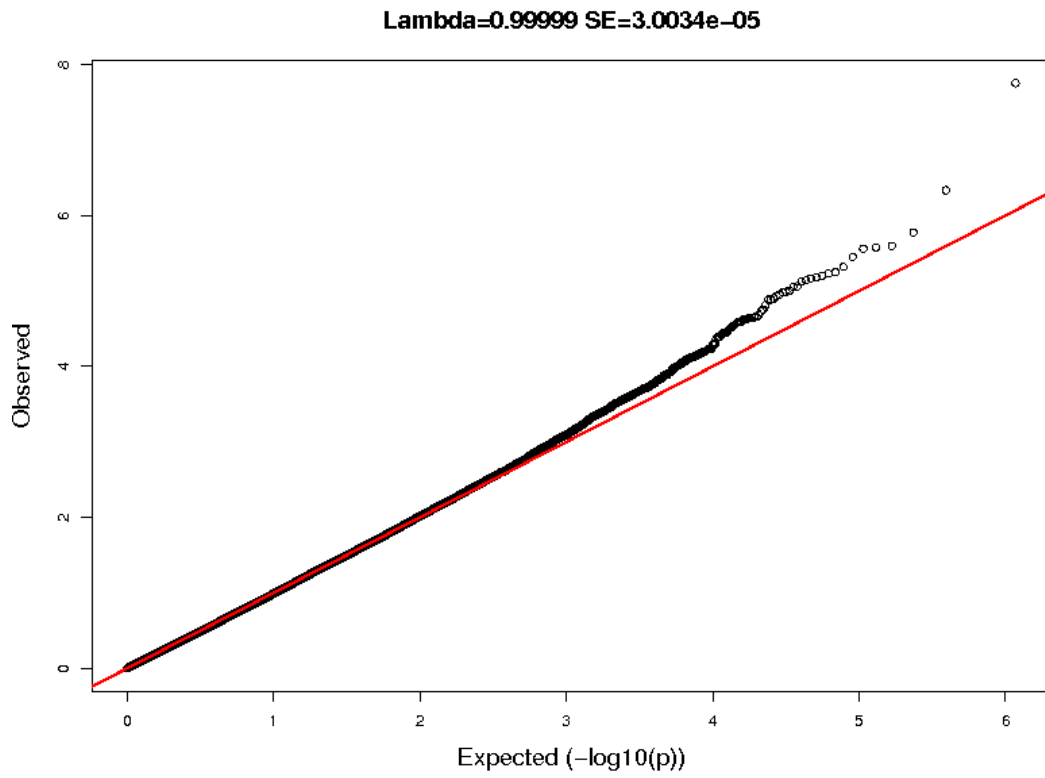
### Supplemental Figure 1: Confirmatory factor loadings

#### B. SAGE sample.



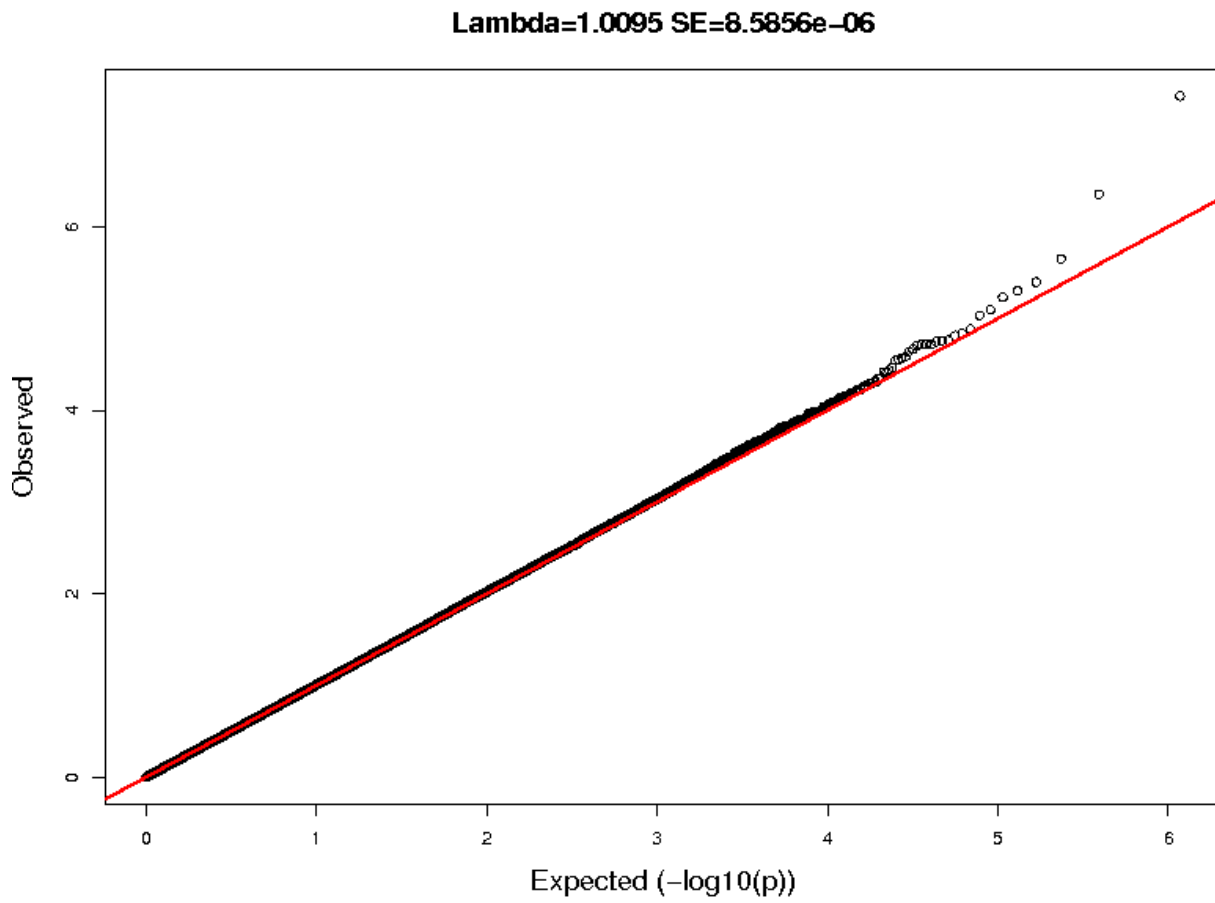
Supplemental Figure 2: QQ plots:

A. ANYDEP, genomic-control p-values;



Supplemental Figure 2: QQ plots

B. QUANTDEP.



**Supplemental Table 1: Summary of association results for SNPs with  $p < 10^{-5}$  for either trait. Results with  $p < 10^{-5}$  are in bold.**

Chr <sup>a</sup>	Position <sup>b</sup>	SNP <sup>c</sup>	MAF <sup>d</sup>	Gene <sup>e</sup>	ANYDEP	QUANTDEP
1	2,944,527	rs2142569	0.34	ACTRT2 (5kb)	4.60E-03	<b>4.00E-06</b>
1	192,902,415	rs842796	0.38	LOC730190 (60kb)	2.99E-03	<b>2.24E-06</b>
1	234,427,534	rs594349	0.34	SLC35F3	<b>3.55E-06</b>	2.75E-02
2	129,990,869	rs13033217	0.45	LOC151121 (8kb)	<b>7.18E-06</b>	5.38E-04
2	129,998,443	rs2952621	0.47	LOC151121 (1kb)	<b>1.77E-08</b>	3.85E-05
2	130,007,750	rs2197022	0.50	LOC151121 (7kb)	<b>2.53E-06</b>	1.97E-04
2	130,034,326	rs7567687	0.46	LOC151121 (33kb)	<b>8.64E-06</b>	1.03E-03
3	62,263,047	rs2291540	0.09	PTPRG	3.20E-03	<b>5.01E-06</b>
3	143,090,003	rs7619769	0.40	SLC9A9	<b>4.78E-06</b>	4.47E-04
3	143,090,698	rs11715693	0.41	SLC9A9	<b>8.79E-06</b>	2.66E-03
3	164,558,595	rs9847462	0.12	SI (138kb)	<b>2.64E-06</b>	8.38E-05
4	81,068,101	rs13129263	0.12	RPSAP39 (14kb)	2.44E-03	<b>9.21E-06</b>
4	81,087,073	rs13138779	0.08	RPSAP39 (3kb)	1.62E-02	<b>7.99E-06</b>
4	178,317,692	rs1506807	0.25	NEIL3 (33kb)	9.12E-04	<b>4.43E-07</b>
6	155,759,778	rs9322524	0.14	NOX3	2.84E-01	<b>5.84E-06</b>
8	25,648,792	rs1978544	0.09	EBF2 (52kb)	<b>1.68E-06</b>	2.26E-02
8	96,536,023	rs11776832	0.33	LOC100616530	<b>5.63E-06</b>	5.73E-04
12	7,383,187	rs7962099	0.10	LOC100420983 (6kb)	<b>5.90E-06</b>	8.26E-04
12	96,923,355	rs7314750	0.45	C12orf55	<b>9.93E-06</b>	3.80E-03
16	12,590,176	rs9806891	0.14	SNX29	<b>7.55E-06</b>	2.30E-05
17	74,988,840	rs3848391	0.17	MGAT5B (42kb)	<b>6.27E-06</b>	7.68E-03
17	74,995,894	rs4789398	0.37	MGAT5B (49kb)	<b>6.61E-06</b>	2.04E-02
18	6,868,925	rs2567261	0.08	ARHGAP28	3.18E-04	<b>3.76E-08</b>
22	26,713,964	rs6519647	0.44	SEZ6L	<b>4.62E-07</b>	2.71E-04
22	26,715,923	rs3788378	0.44	SEZ6L	<b>6.78E-06</b>	1.57E-04

<sup>a</sup> Chromosome;

<sup>b</sup> Chromosomal position (base pairs) based on human genome build 19, dbSNP 137

<sup>c</sup> Single Nucleotide Polymorphism

<sup>d</sup> Minor allele frequency estimated on founders

<sup>e</sup> Gene name and (distance to nearest gene)