



# Big 5 Personality Traits and Comorbidity of Gambling Disorder with Alcohol, Nicotine, and Cannabis Use Disorders in a National Sample

Genevieve F. Dash<sup>1</sup>, Wendy S. Slutske<sup>1</sup>, Nicholas G. Martin<sup>2</sup>, Arpana Agrawal<sup>3</sup>, and Michael T. Lynskey<sup>4</sup>

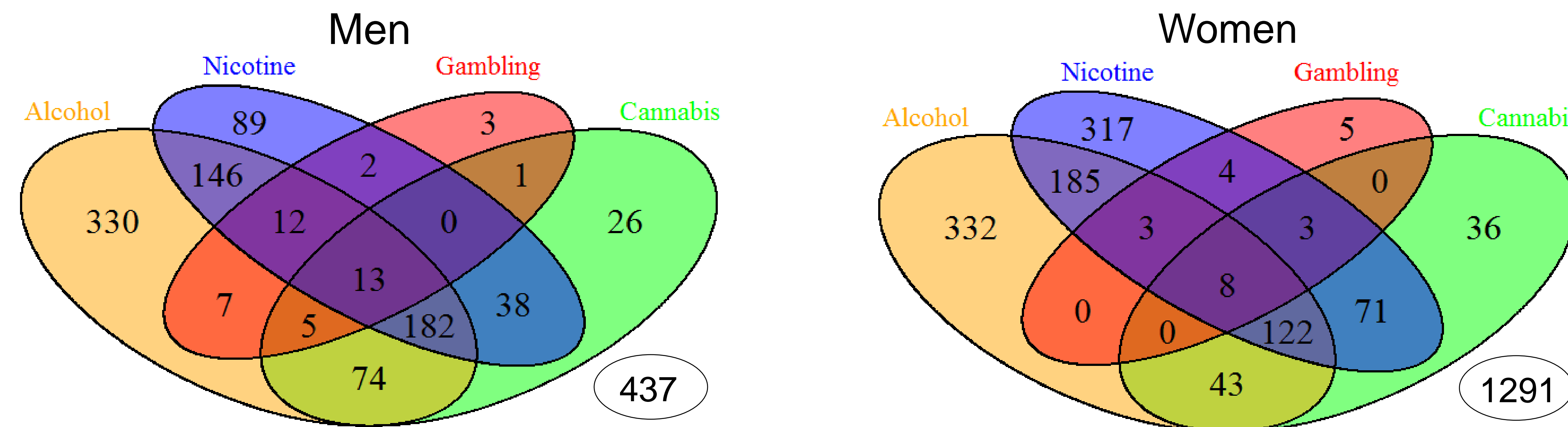
## BACKGROUND AND AIMS

- The DSM-5 re-assignment of gambling disorder (GD) as an addictive disorder alongside the substance-related addictive disorders encourages research into their shared etiologies.
- The present study investigated:
  - the association of Big 5 personality traits (neuroticism/"N", extraversion/"E", openness/"O", agreeableness/"A", and conscientiousness/"C") with lifetime GD, alcohol use disorder (AUD), nicotine dependence (ND), and cannabis use disorder (CUD),
  - the comorbidity of these disorders,
  - the extent to which personality explains comorbidity, and
  - sex differences in these associations.

## MATERIALS AND METHODS

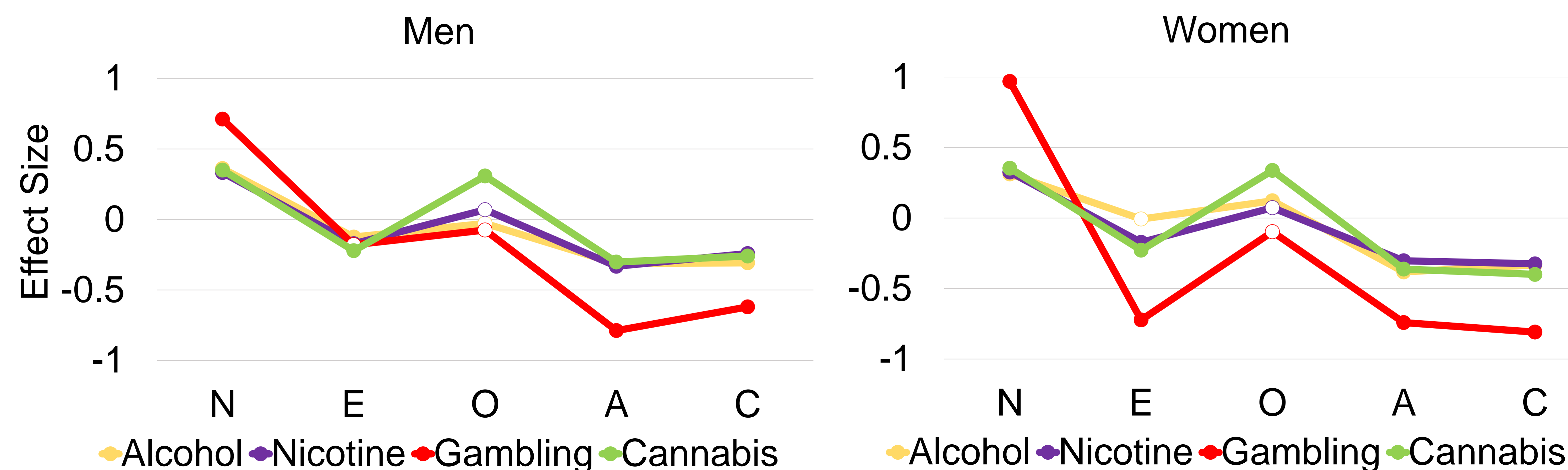
- Participants were 3298 twins and 487 non-twin siblings ( $M_{age}=32$ ; 64% women) drawn from the Australian Twin Registry Cohort III (2005-2009).
- Respondents were surveyed by computer-assisted telephone interview and subsequent (within 2 weeks) self-report questionnaire.
- Assessments included DSM IV GD, AUD, ND, CUD, and Big 5 personality traits.
- Effect sizes were calculated to examine personality differences between individuals with and without each disorder.
- Odds ratios were used to assess the relationships between each pair of disorders before and after controlling for personality

**Figure 1. Comorbidity prevalence in men and women**



Note.  $N_{men} = 1365$ ;  $N_{women} = 2420$ ; detached circle denotes no lifetime disorder.

**Figure 2. Effect sizes and associations between Big 5 personality traits and addictive disorders in men and women**



Note. Closed circle denotes significant ( $p \leq .0001-.01$ ) correlation between disorder and trait.

**Table 1. Associations of GD with AUD, ND, and CUD before and after controlling for personality**

	Alcohol Use Disorder (Odds Ratio)		Nicotine Dependence (Odds Ratio)		Cannabis Use Disorder (Odds Ratio)	
	Unadjusted	Adjusted	Unadjusted	Adjusted	Unadjusted	Adjusted
All	4.35	2.54	4.79	3.76	4.40	3.61
Men	4.97	2.85	3.22	2.48	2.48	2.29
Women	2.31	1.72	8.82	7.71	7.16	5.67

## RESULTS

- 3% of men and 1% of women met criteria for lifetime GD (see Figure 1).
- Comorbidity was more common than GD in isolation (21% vs. 12%), and multimorbidity was most common (67%; 70% of men and 61% of women with GD; see Figure 1).
- GD was associated with neuroticism ( $d = 0.69/1.00$ ), (low) agreeableness ( $d = -0.75/-0.73$ ) and (low) conscientiousness ( $d = -0.70/0.71$ ) in men/women, and with (low) extraversion in women only ( $d = -0.68$ ; see Figure 2).
- GD was associated with ND and CUD in both men and women, and with AUD men only (see Table 1).
- Associations of GD with AUD, ND, and CUD remained significant, but were attenuated after controlling for personality (see Table 1).

## CONCLUSIONS

- The personality profile associated with GD of high neuroticism, low agreeableness, and low conscientiousness was also associated with AUD, ND, and CUD, and explained some, but not all, of their co-occurrence.
- Results were generally similar across men and women, although there appear to be some differences in personality and comorbidity patterns.
- Results suggest that personality underpinnings of GD are similar to those of the substance-related addictive disorders and partially explains their high rates of comorbidity.

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<sup>1</sup> Department of Psychological Sciences, University of Missouri, Columbia, MO, USA

<sup>2</sup> Genetic Epidemiology, Queensland Institute of Medical Research, Brisbane, Queensland, Australia

<sup>3</sup> Department of Psychiatry, Washington University School of Medicine, St Louis, MO, USA

<sup>4</sup> Institute of Psychiatry, Department of Addiction, Kings College, London, UK