**Project Title:** Problematic drinking and comorbid depression and anxiety: testing the robustness of the 'self-medication' hypothesis

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**Level:** PhD

**Background to the project:**

Problems with alcohol use and mental health difficulties, including depressed mood and anxiety, often co-occur (are 'comorbid') within individuals, either simultaneously or in sequence (1-5). Lifetime prevalence estimates suggest ~35% of adults meet criteria for diagnosable alcohol use disorders (AUD) and major depression or anxiety disorders in their lifetime (6, 7). Presently, however, the mechanisms underlying this substantial comorbidity are not clearly understood. It is likely that experiences of either of these mental health difficulties or alcohol-related problems increases the risk of developing the other (8), regardless of which set of problems occurs first in the lifespan. That being said, a dominant hypothesis is that it is more common for individuals to experience depressed mood or anxiety first and then to develop alcohol-related problems through attempts to 'self-medicate' (9, 10). Support for this position has emerged from several studies. Recently, however, there have been calls for this position to be abandoned due to lack of clinical focus on addiction as the primary problem (11). Indeed, it could argued that there is stronger support for the alternative stance, that alcohol-related problems influence the development of experiences of anxiety and/or depression (12, 13). This increased risk for mood difficulties following alcohol-related problems could be due to biological mechanisms, for example decreased white and grey matter as a result of drinking, or ethanol influencing neurotransmitter functioning (10, 14); however, it is also plausible that specific alcohol-related experiences such as social and occupational role impairment, unsuccessful attempts to control use and relationship difficulties may increase the risk for depressed mood and anxiety (15, 16). More detailed research is required to uncover the nature of the association between problematic drinking and experiences of anxiety and depressed mood.

**Methods to be used:**

This research project has ethics approval to access and analyse a secondary data resource – the third National Epidemiologic Survey on Alcohol and Related Conditions (NESARC-III). This survey data was collected and is managed by the US National Institute on Alcohol and Alcohol Abuse (NIAAA). Briefly, the NESARC-III was sponsored, designed and directed by the NIAAA between April 2012 and June 2013. It is a cross-sectional survey, based on a nationally representative sample of the civilian non-institutionalized population of the United States aged 18 years and older. A multi-stage probability sampling survey design was used to select respondents for recruitment. Primary sampling units were counties or groups of contiguous counties, secondary sampling units (SSUs) comprised groups of Census-defined blocks, and tertiary sampling units were households within SSUs. Eligible adults within sampled households were randomly selected. Hispanics, Blacks, and Asians were oversampled. The total sample size was 36,309. The overall response rate was 60.1%. Further details of the survey can be accessed here [https://www.niaaa.nih.gov/research/nesarc-iii](https://www.niaaa.nih.gov/research/nesarc-iii)

The semi-structured Diagnostic Interview used to collect information was the NIAAA Alcohol Use Disorder and Associated Disabilities Interview Schedule (AUDADIS-5). The AUDADIS-5
collects a wealth of information via a computerised-assisted personal interview (face-to-face in the person’s home), including: background information; alcohol, drug and tobacco use and dependence; mood and anxiety disorders; childhood experiences; family history of mental health difficulties; personality characteristics; and treatment-seeking behaviour.

**Objectives of the research:**

This project aims to test a number of key hypotheses in relation to comorbid problematic alcohol use and experiences of anxiety/depression, including:

1. Test how different patterns of alcohol use (e.g. periodic binge drinking or low-quantity regular daily drinking) are associated with specific experiences of anxiety and depression (e.g. sleep difficulties, lack of concentration, irritability).
2. Determine the socio-demographic and psychological characteristics of adults with different drinking patterns who experience specific experiences of anxiety/depression.
3. Inspect the temporal ordering of onset of alcohol problems and experiences of depression/anxiety.
4. Examine how general health related functioning varies conditional upon the temporal ordering of onset of alcohol problems and experiences of depression/anxiety.

These research aims will be addressed using appropriate statistical models, including regression analysis and latent variable modelling.

**Skills required of applicant:**

- Be able to demonstrate a strong interest in pursuing a doctoral degree in the area of mental health.
- Have a good knowledge of statistics (i.e. undergraduate level) and be eager to develop their skills in this area.
- Be enthusiastic and willing to work independently (under supervision).

**References:**