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Personality disorders, alcohol use, and alcohol misuse

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ABSTRACT

Personality disorders (PDs) are psychiatric conditions that manifest early in life from a mixture of genetics and environment, are highly persistent, and lead to substantial dysfunction for the affected individual and those with whom s/he interacts. In this study we offer new information on the associations between PDs and alcohol use/misuse. Specifically, we consider all 10 PDs recognized by the American Psychiatric Association; carefully address important sources of bias in our regression models; and study heterogeneity across PDs, drinking pattern, and gender. To investigate the relationships between PDs and alcohol consumption we analyze data from the 2004/2005 National Epidemiological Survey of Alcohol and Related Conditions ($N = 34{,}653$). We construct measures of any drinking, drinking quantity, and patterns of misuse that could lead to significant social costs including drinking to intoxication, driving after drinking, drinking during the day, and alcohol abuse/dependence. Results show that persons with PDs are significantly more likely to use and misuse alcohol, although associations vary across gender. Moreover, antisocial, borderline, histrionic, and narcissistic PDs display the strongest links with alcohol use and misuse, and the relationships are strongest among the heaviest drinkers. These findings have important public health implications and underscore the potential social costs associated with mental health conditions.

1. Introduction

This study examines associations between personality disorders (PDs), alcohol use, and alcohol misuse. To this end, we analyze data from the 2004/2005 National Epidemiological Survey of Alcohol and Related Conditions (NESARC), a large and nationally representative data set specifically designed to study alcohol use/misuse and mental health conditions such as PDs. The present study considers all 10 PDs recognized by the American Psychiatric Association (APA); addresses potential sources of bias in regression models; and explores heterogeneity across PDs, drinking patterns, and gender.

PDs are a class of psychiatric disorders that lead to diminished social functioning and impose substantial costs on both the person with a PD and those with whom s/he interacts. As defined by the American Psychiatric Association's (APA) Diagnostic and Statistical Manual of Mental Disorders (DSM) (2000), PDs are "pervasive, inflexible and enduring patterns of inner experiences and behavior that can lead to clinically significant distress or impairment in social, occupational, or other areas of functioning." The psychiatric literature attributes the development of PDs to a confluence of genetics and early childhood environment (American Psychiatric Association, 2000; Yudofsky, 2005). Because PDs manifest early in life (childhood or early adolescence) and are exceedingly difficult to treat (American Psychiatric Association, 2000; Yudofsky, 2005), they are considered lifetime conditions, unlike episodic mental health disorders (e.g., depression). Put differently, once an individual is diagnosed with PD, s/he is expected to suffer from this disorder for the rest of her life.

It is widely reported that alcohol misuse causes negative externalities for society. Due to market imperfections, drinkers who misuse alcohol do not fully internalize the cost of their actions and thereby potentially impose costs on others through motor vehicle accidents (Lovenheim and Steefel, 2011), increased use of publically-provided health care and addiction treatment services (Balsa et al., 2009; Levit et al., 2008), suicide attempts (Chatterji et al., 2004), domestic abuse (Markowitz and Grossman, 2000), crime (Carpenter, 2007), and reduced productivity in the labor market (Terza, 2002). As a result, the direct medical, crime, and labor market costs of alcohol misuse in the U.S. amount to

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approximately $259 billion annually (Bouchery et al., 2011). The full burden of alcohol misuse is probably much higher as the negative consequences also impact friends, family members, and co-workers. For example, Balsa (2008) finds that parental alcohol misuse often leads to poor labor market outcomes for their children. Thus, understanding determinants of alcohol misuse, and utilizing this information to minimize associated social costs, could lead to substantial welfare gains for both current and future generations.

2. Methods

To study relationships between PDs and alcohol use/misuse, we analyze data from the National Epidemiological Survey of Alcohol and Related Conditions (NESARC) and model measures of past year alcohol use (any drinking, number of drinks conditional on any drinking) and misuse (weekly drinking to intoxication, any driving after drinking, weekly daytime drinking, alcohol abuse/dependence) as a function of PDs. We utilize detailed information in the NESARC to study the importance of meeting diagnostic criteria for any PD as well as each of the PDs recognized by the APA. We first describe the etiology of PDs and discuss how these disorders are potentially related to alcohol use and misuse. Next, we introduce our conceptual framework, data, and empirical models.

2.1. Background on personality disorders

To be diagnosed with a PD, an individual must exhibit "an enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture" (APA, 2000). The pattern must be inflexible and pervasive across a broad range of personal and social situations; must lead to clinically significant impairment in social, occupational, or other important areas; must be stable and of long duration, with onset traceable back to adolescence or at least early adulthood; and cannot be a consequence of another medical condition.

The DSM divides PDs into three clusters. Cluster A includes paranoid, schizoid, and schizotypal PDs. People with Cluster A disorders are often viewed as odd; speak, think, and act in strange ways; and have difficulty relating to others. Cluster B includes antisocial, borderline, histrionic, and narcissistic PDs. People with Cluster B disorders tend to act in dramatic, hostile, and erratic fashions; have difficulty with impulsive behavior; and violate social norms. Cluster C includes avoidant, dependent, and obsessive-compulsive PDs. People with Cluster C disorders are regularly anxious, fearful, and afraid of social interactions and of feeling out of control. Appendix Table A offers a summary of PD traits.

Based on their defining characteristics, PDs could be related to alcohol use and misuse, and the relationships likely differ across PD types. For example, borderline PD is associated with impulsivity and reckless behaviors while a defining feature of narcissistic PD is a lack of empathy for others and extreme self-interest. Relatedly, those who suffer from antisocial PD feel no remorse for their actions. Persons affected by histrionic PD have problems delaying gratification. These features may lead to alcohol use and perhaps misuse as a coping or self-medicating mechanism. Alternatively, some PDs may protect against alcohol misuse. For example, those who suffer from schizoid and schizotypal PDs shun activities that require personal interactions while those who suffer from paranoid PD are deeply distrustful of others. Persons affected by these conditions may avoid social situations where alcohol use is common (e.g., bars). It is beyond the scope of this study to fully articulate and explore all pathways through which PDs could conceptually be associated with alcohol use/misuse, but this overview suggests potentially strong, yet complex, relationships between PDs and alcohol use/misuse.

2.2. Conceptual framework

Almond and Currie (2011) propose a health production function that forms the conceptual foundation of our research. This model permits health investments—both health harming and promoting—during childhood to have a sustained impact on adult health outcomes. In combination with the psychiatric literature, the AC model provides a useful framework within which to understand the impact of PDs on health in general and alcohol use/misuse by extension (Maclean et al., 2014).

In the AC model, an individual's lifespan is divided into two periods: 1) childhood and 2) post childhood. This structure is formalized through a linear health production function:

$$h = A[\gamma I_1 + (1-\gamma) I_2] \tag{1}$$

where h is health in adulthood (i.e., post childhood), I_1 is health investments made in childhood, I_2 is health investments made post childhood, A is a shift parameter, and γ is a share parameter, which ranges from zero to one and captures the relative weights of I_1 and I_2. If $\gamma \neq 0.5$ both the level and the timing of health investments are important for adult health. For example, if $\gamma > 0.5$, then health investments that occur in childhood yield higher returns than health investments occurring later in life. If $A\gamma > 1$, adult health (h) is affected more than proportionally by childhood health investments (I_1). Thus, this framework allows health investments received in childhood to have a sustained impact on adult health. Because PDs develop early in life as a result of genetics and early childhood environment, in the AC framework they can be viewed as a form of negative health investment, which can persistently impact health and health behaviors into adulthood.

2.3. Data

The National Epidemiological Survey of Alcohol and Related Conditions (NESARC) is a nationally representative survey conducted by the U.S. Bureau of the Census for the National Institute on Alcohol Abuse and Alcoholism (NIAAA). These data are widely utilized to study mental health and substance use (Grant et al., 2004; Hasin et al., 2011, 2007). The NESARC data are de-identified, contain no personal identifying information, and are thus exempt from human subjects review. Interested readers can consult with Grant et al. (2003) for more details on the data set.

We utilize Wave II of the NESARC (fielded in 2004/2005) supplemented with Wave I (fielded in 2001/2002) data for selected PDs that were not re-measured in Wave II. Subjects were interviewed face-to-face through computer-assisted personal interviewing and 34,653 individuals of the 43,093 original respondents completed Wave II. Respondents were age 20 years and older at Wave II. The NESARC is particularly well-suited for our research as it is specifically designed to measure alcohol misuse and psychiatric disorders including PDs, contains a rich set of personal characteristics, and includes all ten PDs recognized by the APA. We exclude respondents younger than 21 years because they are unable to legally consume alcohol and respondents above 64 years because they are entering retirement, which alters alcohol consumption decisions due to health challenges and changes in social networks (Moos et al., 2005). After further excluding respondents with missing data on certain analysis variables (detailed in a later section), our sample includes 11,497 men and 15,199 women.