



Psychiatric disorders and labor market outcomes: Evidence from the National Comorbidity Survey-Replication[☆]

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ABSTRACT

This paper uses the National Comorbidity Survey-Replication to estimate effects of recent psychiatric disorder on employment, hours worked, and earnings. We employ methods proposed in Altonji et al. (2005a) which use selection on observable traits to provide information regarding selection along unobservable factors. Among males, disorder is associated with reductions in labor force participation and employment. When selection on observed characteristics is set equal to selection on unobserved characteristics, the magnitudes of these effects for males are 9 and 14 percentage point reductions for participation and employment, respectively. Among females, we find negative associations between disorder and labor force participation and employment, but these estimates are more sensitive to assumptions about selection. There are no effects of disorder on earnings or hours worked among employed individuals.

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1. Introduction

Many studies have documented the economic burden of psychiatric disorders in the US and worldwide. Psychiatric disorders are highly prevalent, and there is significant co-morbidity within psychiatric disorders as well as between psychiatric disorders and other health problems (Kessler et al., 2005a). Despite recent progress, a high rate of unmet need for treatment persists in the US (Kessler et al., 2005b).¹ As a result, psychiatric disorders remain

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¹ Data from the National Comorbidity Study Replication (NCS-R) indicate that in the US about 26% of adults meet diagnostic criteria for having any psychiatric disorder in the past 12 months (Kessler et al., 2005a). Psychiatric disorders are frequently co-morbid with chronic pain, neurological disorders, circulatory disorders, and gynecological problems. About 45% of adults with any kind of psychiatric

a leading cause of disability. As of 2000, depressive disorders alone were the fourth leading cause of disease burden worldwide, accounting for 4.4% of disability-adjusted life years (DALYs) and 12% of all total years lived with disability in the world (Ustun et al., 2004).

This paper focuses on one disabling aspect of psychiatric disorder—we seek to estimate the effect of recent disorder on labor market outcomes. The central issue in estimating the causal effect of psychiatric disorder on labor market outcomes is that individuals may select into disorder along difficult-to-measure traits that also influence their labor market outcomes, such as self-esteem, motivation, and personality (Ettner et al., 1997; Marcotte and Wilcox-Gok, 2003). Prior researchers have addressed this issue using instrumental variables and other methods that rely on identifying exclusion restrictions (e.g., exogenous variables that are included in the psychiatric disorder equation but left out of the labor market outcome equation) (see Ettner et al., 1997; Marcotte

disorder in the past 12 months have two or more psychiatric disorders (Kessler et al., 2005a). In the early 1990s, 20% of adults with 12-month psychiatric disorder received some form of treatment in the past year—as of the time period 2001–2003, this rate had increased to 33% (Kessler et al., 2005b).

et al., 2000 for examples). These identifying assumptions frequently are hard to justify based on economic theory.

In this paper, we build on prior work by examining the effect of psychiatric disorder on labor market outcomes using methods recently proposed in Altonji, Elder and Taber (AET) (2005a). Their methods do not rely on any identifying exclusion restrictions. Instead, the AET method uses observed differences between those with and without psychiatric disorder to provide information regarding the likely magnitude and direction of selection along unobserved characteristics.

We also build on prior research by using more recent data from the NCS-R. In addition to being more current, the NCS-R has two main advantages over its predecessor, the National Comorbidity Survey (NCS), that are relevant to the present study. First, the NCS-R includes assessments of psychiatric disorder that are based on the DSM-IV diagnostic system rather than the now dated DSM-III-R. The DSM-IV reflects psychiatric epidemiologists' increasing emphasis during the 1990s on requiring individuals to have significant distress or impairment in order to meet criteria for psychiatric disorder (Kessler and Merikangas, 2004). Second, the NCS-R includes somewhat more extensive information on correlates of psychiatric disorder than the NCS. For example, in the NCS-R, respondents provide not only information on whether their parents ever experienced psychiatric symptoms (which is also available in the NCS), but also about the duration of those symptoms specifically during the respondent's childhood.

Our results indicate that among males, having a psychiatric disorder is associated with reductions in the likelihood of current labor force participation and in the likelihood of employment. When selection on observed characteristics is set equal to selection on unobserved characteristics, the magnitudes of these effects for males are 9 and 14 percentage point reductions for participation and employment, respectively. These findings are similar to those previously reported by Ettner et al. (1997), who use data from the National Comorbidity Survey and report that having a 12-month psychiatric disorder reduces the likelihood of employment among males by about 11 percentage points. Among females, we also find negative associations between recent disorder and labor force participation and employment. Compared to the findings for males, however, these effects for females are more sensitive to assumptions made about selection along unmeasured factors.

2. Psychiatric illness and labor market outcomes

There is growing interest in the impact of psychiatric conditions on labor market outcomes. Relative to other chronic illnesses, psychiatric disorders tend to have early onset in the lifespan, affecting individuals during their most productive working years.² Psychiatric disorders may affect labor market outcomes through several mechanisms. First, the symptoms of psychiatric illness can directly impair an individual's ability to obtain and maintain employment, and may detract from earnings, by affecting factors such as productivity, mood, energy level, memory, concentration, decisiveness, motivation, and social relations. Second, employers may be unable or unwilling to make any needed accommodations for an employee with mental health problems. Third, individuals with psychiatric disorders may face outright discrimination if their symptoms or medical history are known to potential employers. In addition to these direct effects on employment outcomes, all of these issues can indirectly reduce the likelihood of employment by lowering

wages and thus lowering the likelihood of labor force participation (Currie and Madrian, 1999; Ettner et al., 1997).³

In prior literature, it has been acknowledged that in a model of labor market outcomes, psychiatric disorders may be endogenous in a structural sense (e.g., if mental health and labor market outcomes are determined simultaneously, reverse causality is possible) and/or in a statistical sense (e.g., unobserved heterogeneity). Researchers have addressed this problem using instrumental variables (IV) and bivariate probit methods.⁴ For example, using NCS data and an IV approach, Ettner et al. (1997) report that past year mental disorder is associated with a reduction of about 11 percentage points in the probability of being employed, but there are less consistent effects on earnings and hours worked. Marcotte et al. (2000), also using the NCS and IV methods, report adverse effects of depression on earnings among females. In further work with the NCS, Marcotte and Wilcox-Gok (2003) use both IV and quantile regression models and report that psychiatric disorders have different effects across the earnings distribution, with the largest effects concentrated among the lowest-earners. Alexandre and French (2001), using bivariate probit and IV methods and data on low-income adults in Miami, find that self-rated depression is associated with adverse labor market outcomes, reducing the probability of being employed by about 19 percentage points and decreasing the number of weeks worked in the past year by 7–8 weeks. Chatterji et al. (2007), based on the National Latino and Asian American Study (NLAAS) and using a bivariate probit model, find that among Latinos, having a mental disorder in the past 12 months reduces the likelihood of employment by about 11 percentage points for males, and by about 22 percentage points for females (Chatterji et al., 2007).⁵

The challenge inherent in applying these empirical methods is finding a credible identification strategy; practical implemen-

³ Although most empirical studies presume a detrimental effect of poor health on labor market participation, Currie and Madrian (1999) note that the effects of health on labor market participation are theoretically ambiguous.

⁴ There is a related economics literature that focuses specifically on the labor market consequences of substance use, and many of these studies also apply IV methods to address the potential endogeneity of substance use. Many of these studies do not use diagnostic measures of substance disorder and, in general, there is inconsistent evidence of negative effects on outcomes. For example, while Terza (2002), utilizing data from the 1988 Alcohol Supplement to the National Health Interview Survey, and MacDonald and Shields (2004), using data from the Health Survey of England, both find that measures of problem drinking are negatively associated with the likelihood of employment, Teki (2004), using data from the Russian Longitudinal Monitoring Survey (RLMS), finds that alcohol consumption is not associated with employment. Also, many studies report that some forms of moderate drinking are actually associated with higher earnings (Berger and Leigh, 1988; Hamilton and Hamilton, 1997; Barrett, 2002; Zarkin et al., 1998; Teki, 2004; van Ours, 2004; Auld, 2005).

⁵ Other studies do not directly address the potential endogeneity of psychiatric disorder. In one of the first studies in this area using diagnostic criteria for psychiatric illness, Frank and Gertler (1991) use data on men from the Baltimore Epidemiologic Catchment Area study and find that mental distress is associated with a 21% reduction in earnings. Mental distress in this study is captured by whether or not the individual has at least two of the following three indications of psychiatric disorder—last year DSM-III diagnosis, at least four symptoms of psychiatric distress as measured on the General Health Questionnaire, and at least one self-reported disability day (Frank and Gertler, 1991). Cowell et al. (2009), using the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC), report that psychiatric disorders detract from employment among women and detract from full-time work among men. Tian et al. (2005), using data on older individuals from the Health and Retirement Survey (HRS), find that depression with comorbid pain is associated with worse labor market outcomes. Using data on employed respondents from the Ontario Health Survey's Mental Health Supplement, Dewa and Lin (2000) find that psychiatric illness, particularly affective disorders and comorbid conditions, are associated with increases in the number of days workers report that they are partially unable to function normally, or are able to function normally only with extreme effort (Dewa and Lin, 2000).

² In fact, the high proportion of YLDs attributed to psychiatric disorders is likely due to the early onset of many psychiatric disorders.

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