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Mental health and public policy

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Cross-Country Evidence,” NBER Working Paper No. 10317, February 2004.

⁷² E. Edmonds and N. Pavcnik, “Does Globalization Increase Child Labor?”

Evidence from Vietnam,” NBER Working Paper No. 8760, January 2002.

⁷³ A. Harrison and J. Scorse, “Moving Up or Moving Out? Anti-Sweatshop Activists

and Labor Market Outcomes,” NBER Working Paper No. 10492, May 2004.

World Trade Flows, 1962-2000

A new dataset of worldwide bilateral trade data by commodity, for 1962-2000, is available from www.nber.org/data (choose: International Trade Data; World Trade Data; NBER-United Nations trade data; documentation is presented in NBER Working Paper No. 11040). Prepared by Robert C. Feenstra and Robert E. Lipsey, with assistance from Haiyan Deng, Alyson C. Ma, Hengyong Mo, and Harry P. Bowen, the data are derived from the United Nations (UN) trade statistics and organized by the 4-digit Standard

International Trade Classification, revision 2, with country codes similar to the UN classification. This dataset updates the Statistics Canada World Trade Database for years 1970-92 that was available from the NBER. In that database, Statistics Canada had revised the United Nations trade data, mostly derived from the export side, to fit the Canadian trade classification and in some cases to add data not available from the export reports. In contrast, the new NBER-UN dataset gives primacy to the trade

flows reported by the importing country, whenever they are available, assuming that these are more accurate than reports by the exporters. If the importer report is not available for a country-pair, however, then the corresponding exporter report is used instead. Corrections and additions are made to the United Nations data for trade flows to and from the United States, exports from Hong Kong and China, and imports into many other countries.

Research Summaries

Mental Health and Public Policy

Sara Markowitz*

Mental illnesses are debilitating diseases affecting millions of people each year. These conditions constitute five of the top ten leading causes of disability worldwide. Depression alone is responsible for more than one in every ten years of life lived with a disability.¹ Despite the severity of the burden of mental illness, many cases of mental disorders remain untreated.

Estimates show that about 28 percent of the U.S. adult population in any year has a diagnosable mental or addictive disorder, yet only 8 percent seeks treatment.² The burden of depressive disorders lies not only with those afflicted, because others bear the costs as well. Maternal depression, for example, is associated with adverse outcomes for children, including children's behavioral and emotional problems.³ In the workplace, mental disorders impose costs on both employers and employees, including unemployment, reduced labor supply, absenteeism, disability-related work leaves,

lower perceived workplace productivity, and reduced earnings.⁴

My current research focuses on the ways in which public policy might intervene and improve mental health outcomes. The first set of studies summarized here examines one of the most serious outcomes associated with mental illness: suicide. The goal of this research is to identify policies that have the potential for reducing suicide attempts and completed suicides. The first paper I discuss examines the effectiveness of mandated mental health benefits in reducing suicide rates among adults in the United

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States. As many states have passed and continue to pass regulations regarding the provision of mental health insurance benefits, knowledge of the effectiveness of such legislation is vital to the policy debate. The second set of papers I describe focuses on youth suicidal behaviors and their relationship with alcohol. Alcohol consumption is known to be correlated with suicide, but the causal nature of that relationship is in question. If alcohol consumption indeed is a contributing factor to suicide, then policies that reduce alcohol consumption may also reduce suicides. Treatment for substance abuse and mental health disorders also may be effective in improving the lives of children. In the third section of this article, I discuss research on the propensity for substance abuse and mental health treatment to reduce mental disorders and criminal behaviors among a group of high-risk children in foster care. The last section focuses on another sub-population at high risk for mental disorders: new mothers. This research asks how the length of “maternity leave” influences maternal mental health.

Mandated Mental Health Benefits

In response to the increasing scope of the problems associated with mental illness, along with improvements in the diagnosis and treatment of mental disorders, a number of states and the federal government have taken steps in recent years to improve access to mental illness services via mandated mental health benefits. Among these mandates are mental health parity laws which prohibit insurance companies from offering plans that place greater financial burden on services for mental health conditions than for physical health conditions. Such laws are designed to lower the price of mental health services faced by insured individuals, improve access to treatment, and ultimately to improve mental health outcomes. However, it is possible that these laws might raise the cost of providing insurance, thereby reducing access.

In a recent study, Jonathan Klick and I examine the question of whether mental health mandates directly con-

tribute to improvements in mental health.⁵ The answer to this question is crucial to policymakers at the state and federal levels as they consider implementing and expanding mental health insurance mandates. We use state-level suicide rates as a measure of the mental health of the population, because numerous studies have shown suicide to be strongly correlated with mental illness. Researchers believe that almost all individuals who commit suicide have a diagnosable mental disorder, but only half of people who die by suicide receive any mental health treatment in their lifetimes.⁶ As a result, mandated mental health benefits that are successful in increasing access to treatment have the potential to save many lives.

Using state-level data spanning 1981-2000, we consider the effectiveness of different types of mandated mental health benefits in reducing the adult suicide rate. The mandates we examine include laws requiring that mental health benefits be provided on parity with physical health benefits, and laws that simply require that a minimum level of mental health benefits are provided or merely offered. We use instrumental variables to account for potential simultaneity between suicide rates and the adoption of mental health mandated benefits, although the results suggest that simultaneity is not an issue.

Our research shows no statistically significant relationship between the adoption of any type of mental health mandate and adult suicides. Mandated offering laws and parity laws, which represent the majority of the different types of state laws, drive the overall results and each appears to have no effect on suicide rates. However, the presence of mandated benefits that are not on parity with physical health benefits actually might increase the suicide rate. This may occur if mandates raise the cost of providing health insurance, inducing employees or firms to drop health insurance altogether. In sum, this study contributes to the growing consensus in the literature that mental health mandates do not accomplish their desired goals.

Alcohol and Youth Suicide

Every year, more American young people die from suicide than from all leading natural causes of death combined. Suicide is the third largest cause of death among youth, behind accidents and homicides. The severity of the problem led the Surgeon General of the United States to issue a call to action in 1999: “The nation must address suicide as a significant public health problem and put into place national strategies to prevent the loss of life and the suffering suicide causes.”⁷ Currently, there is a dearth of known, effective policies to reduce suicidal behaviors, although previous research has identified several risk factors that are associated with suicidal behaviors: one of the most important of these factors is substance use. I have co-authored a number of papers that examine first, the causal link between alcohol consumption and suicide, and second, the propensity for alcohol control policies to reduce suicidal thoughts, attempts and completed suicides.

To establish causality from substance use to suicide, it is essential to address the non-random nature of substance use and suicidal behaviors. Pinka Chatterji, Robert Kaestner, Dhaval Dave, and I attempt to go beyond simply measuring correlations by using methods that account for non-random selection.⁸ In one study, we use an instrumental variable technique that provides evidence of a causal relationship from alcohol and illicit drug consumption to suicidal thoughts and suicide attempts among college students. In this paper, a reduced-form equation is estimated which directly relates the determinants of alcohol and drug use to suicidal behaviors. These results indicate that higher beer prices may be successful in reducing the number of suicidal thoughts and attempts among young adults. However, the precision of the estimates is sensitive to the specification of the model.

In a second study Chatterji, Kaestner, Dave, and I examine the causal relationship from heavy drinking and alcohol abuse to suicidal attempts among teenagers. The lack of

valid instruments in the data used in this study necessitates the use of an empirical approach; this allows us to assess the existence and strength of a causal relationship without relying on identifying assumptions. Our method specifies both an alcohol equation and a suicide equation and acknowledges the interdependence of the two. We use a constrained bivariate probit to gauge the sensitivity of the results to different assumptions about the degree of correlation in the error terms. With this methodology, we can estimate the degree of sorting on unobservable factors using the observed data and identify a lower bound on the causal parameter estimate. The results suggest that a causal relationship between binge drinking and suicide attempts among teenagers is very unlikely. However, the findings do support a causal relationship between clinically defined alcohol use disorders and suicide attempts among girls.

A third paper by Pinka Chatterji, Robert Kaestner, and me focuses on completed suicides among youth in the United States.⁹ This paper presents a straightforward reduced-form model of the effectiveness of beer taxes and other alcohol regulatory variables in reducing completed suicides in a panel of states over time. The results indicate that the state excise tax on beer is negatively associated with male suicides, but has no statistically significant association with female suicides. Suicides by males are also positively related to the availability of alcohol, and negatively related to the presence of a 0.08 blood alcohol concentration law and a zero tolerance law for drunk driving. Strict drunk driving laws also may reduce suicides by teenage females. These findings suggest that strict alcohol policies may be effective in reducing suicides, particularly among young males.

Youth, Crime, and Substance Abuse and Mental Health Treatment

There is a high correlation between crime, substance abuse, and poor mental health. This correlation suggests that factors which reduce substance abuse and improve mental health have the potential to reduce

criminal activities. Alison Evans Cuellar, Anne Libby, and I examine the effectiveness of substance abuse and mental health (SAMH) treatment in reducing crimes committed by a group of at-risk teenagers in the Colorado foster care system.¹⁰ The majority of children in foster care come from abusive or neglectful homes. As a result, these children exhibit more chronic medical, emotional, and psychological problems than other youth.¹¹ Therefore, these children are considered at high risk for criminal behaviors.

This paper uses juvenile detention data in conjunction with substance abuse and mental health treatment data for youth enrolled in the Colorado state foster care program over a three-year period. Foster care children are entitled to benefits under Medicaid, so Medicaid claims and encounter data provide the information on SAMH treatment for the teenagers in our sample. In this sample, almost half of the youths in foster care receive some form of outpatient or residential treatment for mental health or substance abuse at least once during the sample period. We use duration models to examine the structural determinants of detention, and we analyze the impact of receiving SAMH treatment in delaying or preventing this group of at-risk youth from engaging in criminal behavior.

Our results show that youth who receive SAMH treatment have lower probabilities of being detained for any offense. Accounting for the unobserved heterogeneity makes the magnitude of these effects larger. The conclusions drawn from this study suggest that expansion of health services targeted at these youth may be effective at reducing crime. For violent crime, where the literature shows that substance abuse plays a significant role, stricter alcohol-regulatory policies also may be highly effective in reducing crime.

Length of Maternity Leave and Maternal Mental Health

Chatterji and I investigate the how the length of maternity leave affects maternal mental health in a sample of mothers who returned to work after childbirth. This paper is

based on the hypothesis that among women who were employed while pregnant and who return to work during the first six months of the child's life, longer leave from work will influence maternal health. A few correlational studies have shown that women who return to work soon after childbirth experience more mental and physical health symptoms than other women, perhaps because of increased stress and obligations. For some mothers, returning to work quickly may be detrimental to mental health; for others, working may be complementary to mental health. Intuitively, the direction of the impact is indeterminate and must be answered empirically. This question is also of interest from a policy perspective. A number of states currently are considering legislation that would provide paid family leave. This policy change likely would increase the length of maternity leave, but at a cost to states, employees, and businesses. Without information about the health impact of longer leave after childbirth, it is difficult to weigh the costs and benefits of these proposed state-level policy changes.

We use data from the National Maternal and Infant Health Survey of 1988 to estimate the effect of length of maternity leave on measures of depression. Ordinary least squares estimates provide baseline estimates, and instrumental variables are used to explain the possibility that length of leave is endogenously determined. Our results indicate that, among employed mothers of infants, delaying returning to work decreases the number or frequency of depressive symptoms. This finding persists regardless of whether instrumental variable methods are used to address the potential endogeneity of returning to work. However, the length of maternity leave is not significantly associated with the probability of meeting a threshold of depressive symptoms that are indicative of clinical depression.

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¹⁰ A.E. Cuellar, S. Markowitz, and A. Libby, "The Relationships Between Mental Health and Substance Abuse Treatment and Juvenile Crime," NBER Working Paper No. 9952, September 2003, published as "The Effects of Mental Health and Substance Abuse Treatment on Juvenile Crime," *Journal of Mental Health Policy and Economics*, 7, 2 (June 2004), pp. 59-68.

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Social Returns to Human Capital

Enrico Moretti*

My research focuses on different areas in applied microeconomics. One of these areas is the economics of education. My work on this area centers on the issue of social returns to human capital. After 40 years of research on the relationship between education and earnings, economists now have a solid understanding of the private benefits of schooling. But much

less is known about the social returns to education, even though economists have speculated about the possibility of human capital externalities for at least a century. Theory predicts that increases in the overall level of education can benefit society in ways that are not fully reflected in the wages of educated workers. Human capital spillovers may increase productivity over and above the direct effect of education on individual productivity. Furthermore, increases in education also may reduce criminal participation and improve voters' political behavior.

The possibility that the social return to human capital differs from its

private return has tremendous practical importance. For example, the magnitude of the social return to education is a crucial tool for assessing the efficiency of public investment in education, since state and local governments subsidize almost all direct operating costs of primary and secondary educational institutions. In fact, much of the argument for public education is based on the recognition that education not only rewards the educated individual, but also creates a variety of benefits that are shared by society at large.

Despite the significant policy implications and a large theoretical literature that assumes the existence of

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