New Dimensions of Economic Well-being Among People with Mental Illness: Evidence from Healthcare for Communities

Carole Roan Gresenz and Roland Sturm

Objective. To analyze the relationship between mental health and savings and compare it to the relationship between common chronic physical conditions and savings.

Data Source. Healthcare for Communities, a national survey conducted in 1997/1998 with approximately 10,000 respondents.

Study Design. We used logistic regression to analyze any savings versus no savings and used ordinary least squares regression to study level of savings conditional on having any savings.

Principal Findings. Individuals screening positive for any mental health disorder are less than two-thirds as likely as individuals with no mental health problems to have any savings. The percentage of savers declines with age among those with a probable mental health condition, compared to a rise with age among other individuals, including those who are chronically physically ill.

Conclusion. The main finding is less the sizeable gap in the percentage of savers among individuals who have and do not have a mental disorder than the strong interaction with age. Older individuals with mental health conditions are at particular risk for having no savings and are at more risk than individuals in poor physical health. Low levels of saving among older individuals with mental health problems become particularly problematic when these individuals transition into Medicare. With limited household wealth, these individuals are the group least likely to be able to afford supplemental insurance that covers medications and least likely to be able to afford the out-of-pocket costs for newer psychotropic medications.

Key Words. Wealth, mental health, savings, depression

INTRODUCTION

Many recent studies have demonstrated that the burden of mental health disorders constitutes a major public health problem in the United States and throughout the world (Ustun 1999). The Global Burden of Disease Study (Murray and Lopez 1996) predicts that unipolar major depression will be the second leading factor in global disease burden by 2010 and that mental disorders will account for 15 percent of the global disease burden. In the United States studies such as the Epidemiologic Catchment Area Study (ECA) (Robins and Regier 1991), the Medical Outcomes Study (MOS) (Wells et al. 1996), and the National Comorbidity Survey (NCS) (Kessler 1994; Kessler, McGonagle, Shanzang, et al. 1994) have documented the prevalence of mental health disorders and heightened awareness among researchers and policymakers that mental health disorders constitute a major public health problem.

These initial epidemiologic studies provide limited guidance for policy, which requires newer data to predict the social consequences of recent policy and market changes on individuals with mental health disorders. Health insurance rates have been declining since the ECA was fielded (Kronick and Gilmer 1999; Carrasquillo et al. 1999; Fronstin and Snider 1996), although the most recent evidence suggests that the decline in employer-offered coverage may now have stopped (Long and Marquis 1999). Most recently there have been efforts to improve health insurance for mentally ill among the privately insured through "parity" legislation, but neither the strong economy nor mental health parity legislation seems to have reversed the absolute and relative (to general medical benefits) deterioration in health insurance benefits for mental health care (Sturm and Wells 2000; Pacula and Sturm 2000; Sturm and Pacula 2000). Changes in treatment patterns, such as the increased use of medication, can disproportionately affect the wealth of individuals, especially in the Medicare population, who do not have insurance coverage for medications.

We used data from an ongoing national panel survey, Healthcare for Communities (HCC), to analyze the relationship between mental health and

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savings. The relationship between mental health and savings is contrasted to that of common chronic physical conditions. Wealth is affected by both current and prior employment experiences and offers a measure of the potential cumulative and longer-term effects of mental health on economic well-being. In addition, with mental health insurance remaining more limited than medical insurance and requiring larger patient cost sharing, the ability of individuals or their families to pay for treatment continues to be an important predictor of access to care and outcomes. That ability is not only affected by current income stream but also by prior income and its effect on accumulated savings. The emphasis on wealth provides a somewhat different angle on economic outcomes compared to other recent research that has studied employment status or individual productivity (Ettner, Frank, and Kessler 1997; Hamilton, Merrigan, and Dufresne 1997; Mullahy and Sindelar 1990; Dooley, Catalano, and Wilson 1994; Broadhead et al. 1990; Wells et al. 1996).

DATA AND METHODS

We analyzed data from HCC, a national survey funded by the Robert Wood Johnson Foundation designed to track the effects of the changing health care system for individuals at risk for alcohol abuse, drug abuse, or mental health disorders. HCC links primary data collected from households, employers, and public agency administrators with secondary data sources. Our analysis relied on the household survey component of the HCC, which reinterviewed participants in the Community Tracking Study (CTS) (Kemper, Blumenthal, Corrigan, et al. 1996) about 15 months after their initial interviews. The HCC household sample was selected from a random sample of 30,375 adult CTS telephone respondents (the HCC sampling frame), of which 14,985 were selected for an expected completion of 10,000 interviews. HCC used information from the baseline CTS interview to oversample individuals with low income, high psychologic distress, or mental health specialty use from the HCC sampling frame. The HCC sampling strategy increased the number of individuals with mental illness by over 40 percent compared to a completely random sample and consequently increases the statistical power for analyzing this group compared to a similarly sized random population sample. We obtained 9,585 eligible responses (64 percent response rate). Weights to adjust for sampling design and nonresponse were developed to obtain nationally representative estimates. A full description of the study design has been published in Sturm, Gresenz, Sherbourne, et al. (1999).

Within the field of mental health services and substance abuse research, HCC is a unique study in that it puts equal weight on clinical/epidemiologic and economic/health policy considerations. The most extensive longitudinal economic surveys contain no or very few mental health measures (e.g., Panel Study of Income Dynamics, National Longitudinal Survey of Youth, Survey of Income and Program Participation, Health and Retirement Survey). At the same time, surveys focusing on health contain little or no information about an individual's labor market history or wealth (e.g., ECA, MOS, and NCS).

Mental health was assessed in the HCC household survey using clinical screening instruments. Our main measure of mental health was a dichotomous indicator of whether the individual has a probable mental health disorder. The variable is positively coded if an individual exceeds one or more of the following criteria: the screening versions of the Composite International Diagnostic Interview–Short Form (CIDI-SF) (for major depressive, dysthymic, and generalized anxiety disorder); the CIDI stem items for panic disorder plus a limitation in role functioning on the SF-12 (for panic disorder); the CIDI stem item for lifetime manic symptoms; or either ever having an overnight stay for psychotic symptoms or ever receiving a diagnosis of schizophrenia from a doctor (for psychotic disorder). Of the sample, 20.5 percent (14.5 percent, weighted) exceeded one or more of the screening criteria and were coded as having a probable mental health disorder.

Physical health was measured by individuals' responses to questions about the presence or absence of 17 chronic physical health conditions. The chronic health conditions assessed were asthma; diabetes; hypertension; arthritis; physical disability such as loss of arm, leg, eyesight, or hearing; trouble breathing; cancer; neurologic condition; stroke or paralysis; angina/heart failure/coronary artery disease; chronic back problems; stomach ulcer; chronic liver disease; migraine or chronic severe headaches; chronic bladder problems; chronic gynecologic problems (women only); and other chronic pain conditions. We created a variable indicating whether an individual had three or more chronic conditions, positive for 22 percent of the sample (19.9 percent, weighted). "Healthy" individuals had neither any probable mental health condition nor three or more chronic physical conditions.

The main dependent variable was family savings. Respondents were asked to estimate level of family saving, defined to include money in checking accounts, stocks, bonds, mutual funds, IRAs, investment trusts, certificates of deposit, and the cash value of life insurance policies. Missing data are a potentially important problem when trying to measure household wealth. However, some relatively

simple new survey methods, including unfolding follow-up brackets, appreciably improve the quality of household economic data and significantly reduce item nonresponse (Juster and Smith 1997). We adopted this approach in HCC. Respondents were asked to respond with actual dollar amounts to avoid the problem of only collecting grouped data. (Savings were later topcoded at one million dollars.) Individuals who refused or who were not able to estimate specific dollar amounts were then asked a sequence of unfolding bracketed amounts. Continuous savings data were partially or completely incomplete for 22.6 percent of respondents (n = 2,163), but for 65 percent of those with incomplete continuous data (n = 1,394), bracketed information regarding savings was available and missing values were imputed taking this additional information into account. Only 8 percent of the sample had completely missing data; missing values were imputed without the use of bracketed information for the 2.4 percent of respondents (n = 230) who did not answer the initial savings question regarding whether the family had any savings and for the 5.6 percent of respondents (n = 539) who offered that they had savings but did not answer the bracketed questions. The imputation process involved identifying cells of "donors" using the bracketed information when available, as well as sociodemographic variables, health status variables, and measures of income. Multiple imputation procedures (Rubin 1996) in which five data sets were created to capture the uncertainty in the imputation process were implemented; analyses were conducted on all five data sets and the results were combined. A limitation of the study is the self-reported nature of savings, which, compared to an individual's wage rate or current income, may be difficult for respondents to accurately assess.

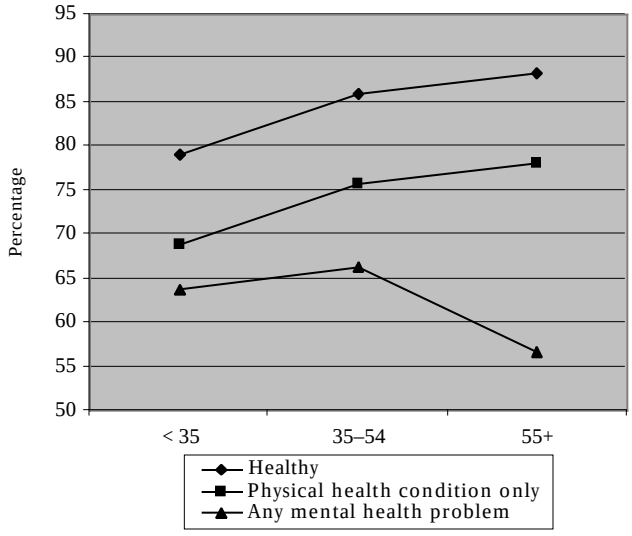
A logit model was used to analyze the probability of having any savings and ordinary least squares regression was used to analyze the log of the level of savings conditional on having some savings. The key variables of interest were indicators of mental health and physical health. We interacted age and health variables to isolate differences in savings within age groups between individuals with and without probable mental health disorders. We grouped individuals into those under 35, those aged 35 to 54, and those 55 and over (27.3 percent, 40.2 percent, and 32.5 percent, weighted, respectively). Other control variables for demographic characteristics included race and gender but not education, marital status, or labor market history, which are endogenous variables affected by mental health illness. Standard errors were adjusted for the clustered sampling design by site.

RESULTS

Median saving among individuals less than 35 years of age was $2,600 among healthy individuals, where healthy was defined as being void of any probable mental health condition and having fewer than three chronic physical ailments. Similarly aged individuals with a probable mental health disorder had a median saving level of $500, or approximately one-fifth that of their healthy counterparts. Among individuals aged 35 to 44, median saving levels were $2,100 and $11,400 for those who do and do not have a probable mental health condition, respectively. The disparity in median saving levels between those with and without a mental health condition was at its greatest among individuals over 55: those with a probable mental health disorder had less than 1/16th the savings of other individuals—a median of $1,800 compared to $29,800 for healthy individuals. In contrast, median saving levels among those with multiple chronic physical ailments increased with each successive age group, from $700 to $5,500 to $10,300, respectively. Correspondingly, the ratio of median savings between those with physical ailments and healthy individuals changed from approximately one-fourth among younger individuals, to about one-half among those aged 35 to 54, to close to one-third among those aged 55 or over.

Much of the difference in overall saving between healthy and mentally ill individuals is attributable to a difference in whether an individual has any savings: positive savings were reported by 79 percent, 86 percent, and 88 percent of healthy individuals aged less than 35 years, 35 to 54 years, and over 55 years, respectively. In comparison, among individuals with a mental health problem, savings rates fell to 64 percent, 66 percent, and 57 percent among the respective age groups. The proportion of healthy individuals who had any savings thus rose consistently with age; however, among the mentally ill, older individuals not only had lower savings compared to those aged 35 to 54 ($p < .001$), but also compared to those under 35 years of age ($p < .05$). Figure 1 depicts the contrasting patterns. In addition, Figure 1 shows differences in savings rates between individuals with physical health problems (only) and those with mental health problems, where the latter category includes individuals with only mental health disorders and those with co-occurring physical disorders. Comorbid physical conditions are common among those with mental disorders: more than half of individuals with a mental health problem also have multiple chronic physical conditions, and two in five have three or more such chronic conditions. As with healthy individuals, saving

Figure 1: Percentage of Individuals with Any Savings, by Age and Health Status



rates rose with age among those with only physical health conditions, in contrast to the falling rate of saving with age among those with a mental health condition.

Figure 2 shows patterns by age and mental and physical health status of the level of savings given positive savings. In each age group median savings were lower among those with mental or physical health problems, but the pattern of rising levels of savings with age held across all individuals.

Table 1 reports log odds ratios for having any saving. Individuals screening positive for any mental health disorder were less than 60 percent as likely as individuals with no mental health problems to have any savings and were no more likely than individuals with three or more chronic physical health conditions to have savings. The probability of having positive savings increased with age except for individuals who had a probable mental health condition. Individuals over age 55 with a mental health problem were less likely than younger individuals with a mental health condition to have any savings. In contrast, there were no significant effects of the interacted age and physical health variables. Table 1 also reports results from the ordinary least squares regressions of level of savings (conditional

Figure 2: Median Saving Level Given Positive Saving, by Age and Health Status

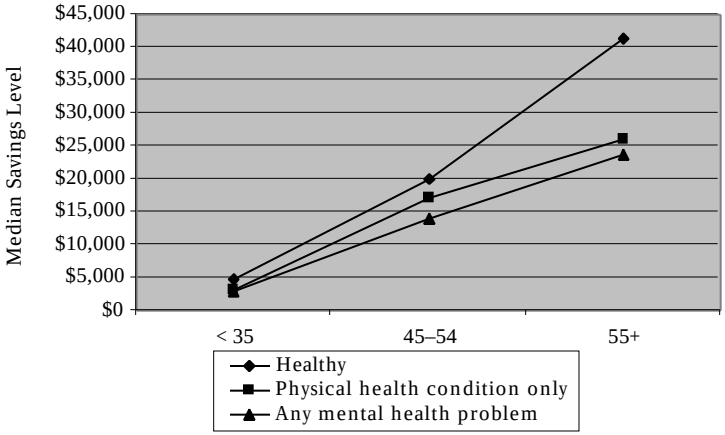


Table 1: Logistic and Ordinary Least Squares Regression Results: Any Saving vs. No Saving and Level of Saving Given Positive Saving

	Any Saving Log Odds Ratio (95% Confidence Interval)	*Level of Saving Coefficient (Standard Error)*
Main Effects		
Any mental health diagnosis	.56*** (.38–.82)	–.32 (.20)
Three or more chronic conditions	.59* (.35–1.01)	–.41 (.27)
Age 35–54 years	1.65*** (1.3–2.1)	1.20*** (.09)
Age 55+ years	1.85*** (1.40–2.43)	1.80*** (.12)
Interacted Effects		
Any mental health diagnosis* age 35–54 years	.80 (.51–1.25)	0 (.22)
Any mental health diagnosis * age 55+ years	.55** (.34–.90)	.20 (.26)
Three chronic conditions* age 35–54 years	.72 (.44–1.18)	.04 (.35)
Three chronic conditions* age 55+ years	.73 (.41–1.29)	–.09 (.31)

***$p \leq .01$; **$p \leq .05$; *$p \leq .10$.

Note: Analyses adjusted for race and gender.

on having any savings). Level of savings increased with age; however, neither the presence of any mental health condition nor physical health problems affected level of savings given positive savings. The rise in savings with age was not significantly affected by mental or physical illness.

DISCUSSION

Labor market outcomes—including employment status, hours of work, wage rate earned, length of employment, and others—are central functional outcomes that play a major role in determining the social costs of illness. Compared to chronic physical health problems, the indirect costs of mental health disorders caused by poor labor market outcomes are likely to play a more important role because mental health disorders affect younger individuals, a fact highlighted in cost-of-illness studies (Rice et al. 1990; Greenberg et al. 1993). Despite the likely role of indirect costs, and even though research on the relationship between employment and mental health status extends back more than 60 years (Eisenberg and Lazarsfeld 1938), empirical evidence is scarce as prior national databases focused either on health or on economic issues and had very limited measures in the other area. For example, one of the most often cited studies on the costs of depression (Greenberg et al. 1993) used the relationship between all mental disorders and income because no consistent data were available to analyze depression and income specifically.

This article focuses on the relationship between mental health and wealth as measured by holdings of relatively liquid savings. Central determinants of inflows into savings are an individual's history of employment and unemployment, hours worked, wage rate, and other labor market factors. Labor market outcomes such as length of job tenure and the extent to which individuals transition between jobs may affect health insurance availability and coverage and, in turn, outflows from savings through expenditures on health care. Wealth is affected by both current and previous labor market experiences and arguably offers some measure of the potential cumulative and longer-term effects of mental health on economic well-being. In addition, financial resources are an important determinant of access to mental health care.

We found a sizeable gap in the probability of having any savings between individuals with and without a probable mental health disorder, and perhaps more importantly, there was a strong interaction between mental health and age. Older individuals with mental health conditions are at particular risk for having no savings and are at more risk than individuals in poor physical health. The study focuses on

individuals with mental illness as a whole, and there may be differences in savings among individuals with different types of mental illness. Future research on the relationship between particular mental conditions, and perhaps compared to particular physical conditions, could provide additional depth to the findings here.

Low savings among older individuals with mental health problems is a particular concern: As those individuals transition into Medicare they are the group least likely, given their limited household wealth, to be able to afford supplemental insurance that covers medications; they are also least likely to be able to afford the out-of-pocket costs for newer psychotropic medications. However, especially for the elderly, newer medications with less problematic side effects, such as selective serotonin reuptake inhibitors for depression, may be easier to tolerate and therefore more effective than inexpensive generic drugs such as tricyclic antidepressants.

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