Poverty, Material Hardship and Mental Health*

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Abstract

A large number of studies have linked living in poverty to poor mental health outcomes. However, less is known about the types of hardships associated with poverty that produce poor mental health. Recent evidence suggests that there can be substantial differences between the population defined as poor according to the federal poverty measure and the population reporting material hardships such as food insecurity and housing problems (Iceland and Bauman 2004). We plan to use measures of mental health at two points in time from the longitudinal Fragile Families Survey to better discern the causal direction of the relationship between income poverty, hardship, and mental health. More specifically, we will use fixed-effect models that control for time-invariant unmeasured heterogeneity in the sample.

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Introduction

A large number of studies have linked living in poverty to poor mental health outcomes. However, less is known about the types of hardships associated with poverty that produce poor mental health. Recent evidence suggests that there can be substantial differences between the population defined as poor according to the federal poverty measure and the population reporting material hardships such as food insecurity and housing problems (Iceland and Bauman 2004). The goal of this research is not so much to dismiss income poverty as an unimportant indicator of deprivation, but rather to focus on the role of other hardship measures in producing negative mental health outcomes, and to test the extent to which hardship measures help mediate the negative effect income poverty has on mental health.

At the present time, there is no research examining how material hardship mediates the effect of poverty on mental health. Moreover, the relatively few studies that look at the broader association between hardship and mental health suffer from two limitations. First, they tended to focus on only one type of hardship. The proposed project would expand the scope to include three dimensions of hardship and alternative summary hardship indexes. Looking at multiple forms of hardship allows us to determine if some forms are associated more closely with mental health problems than others. Second, previous work relied upon data that are not nationally representative and are only cross-sectional. The proposed project uses nationally representative longitudinal data collected in the Fragile Families Survey– a nationally representative survey of unmarried parents. This allows us to conduct more precise causal modeling and explicitly incorporate time-invariant unmeasured heterogeneity into our model. The data also provide insight on a population (unmarried families) vulnerable to poverty, hardship, health problems,

and which have been the focus of policy interventions in recent years (such as through welfare reform initiatives).

The project seeks to 1) develop a set of hardship measures—such as food insecurity, difficulty meeting basic needs, and housing conditions— that may be linked to mental health outcomes; 2) determine empirically which forms of hardship are more important for mental health than others; 3) examine whether these alternative hardship measures in fact help mediate the long-observed relationship between official poverty and mental health; and 4) determine if racial differences in mental health can be explained by different levels of hardship.

We plan to use measures of health outcomes at two points in time from the longitudinal Fragile Families Survey to better discern the causal direction of the relationship between income poverty, hardship, and health outcomes. More specifically, we will use fixed-effect models that control for time-invariant unmeasured heterogeneity in the sample.

Background

Poverty and Health

At the individual level, the general association between health and income is well established and has been found in different places, time periods, genders, and ages (Lynch et al. 2004; Adams et al. 2003). For example, in terms of mental health, Kessler et al (1994) report a higher lifetime and 12-month incidence of affect, anxiety, and substance use disorders among low-income individuals. The relationship between income and health is not just found at the very bottom of the income distribution or for those living below the federal poverty line. There is a clear income gradient to health such that every step above the poverty line is associated with an incremental improvement in health (Lynch et al. 2004; Ecob and Davey Smith 1999).

Furthermore, there is a growing consensus that low socioeconomic disadvantage precedes poor health. Although reverse causation—poor health leading to lower earnings—is present, it is no longer considered the primary mechanism behind the association between income and health (Lynch et al. 2004). Thus, exploring new dimensions along which the income-health gradient may operate is of substantial interest.

The Association between Poverty and Other Hardship Measures

The empirical literature on the association between income poverty and other hardship measures indicates that, on the one hand, poor people are considerably more likely to report suffering a variety of material hardships than non-poor people (Boushey et al. 2001; Iceland and Bauman 2004). For example, Boushey et al. (2001) report that while about 13 percent of respondents under 200 percent of the poverty level in their study reported not having enough food to eat, only 2 percent of those over 200 percent of the poverty line said the same. On the other hand, as these findings indicate, many people with low income do not report various types of hardships, and some people who are not poor do report hardship. One of the best-developed measures of hardship, the food security scale, correlates with income and poverty at approximately 0.33 (Hamilton et al. 1997). Iceland and Bauman (2004) find that income poverty is more strongly associated with some hardship measures, such as food insecurity, difficulty paying bills, and possession of consumer durables, and less strongly associated with others, including housing and neighborhood problems and fear of crime. They conclude that various hardship measures tap into distinct dimension of well-being. The implication for the current study is that we may in turn find that various hardship measures are differentially associated with health outcomes.

The Link between Material Well-Being and Mental Health

To study the potential causal relationship between hardship measures and mental health outcomes, we draw on two theoretical traditions: the neomaterial view and the social production of disease literature.

In the neomaterial tradition, hardship measures could have a negative impact on health through a direct effect of nutritional shortfalls, exposure to unhealthy housing conditions, or reductions in basic needs. Previous research focused on components of the public infrastructure such as education, health services, transportation, environmental and occupational controls, quality of food, and quality of housing (Lynch et al. 2000). However, there is reason to believe that material conditions at the individual level could also have direct effects on mental health. Prior research suggests that food insufficiency can have important health consequences (Nelson et al. 1998; Casey et al 2004). For example, research by Heseker and his colleagues (1992) has documented that even the early stages of nutrient deficiency can have adverse effects on behavior and mental performance. More recent studies have focused on the role of vitamin B_{12} and folate deficiency on depression and dementia (Tiemeier et al. 2002; Alpert et al. 2000; Reynolds 2002). There is also tentative evidence that poor housing conditions may affect mental health (Hopton and Hunt 1996; Evans et al, 2003).

Drawing on theories of the social production of health and disease literature which posit that an individual's social and economic positioning determines their exposure to health-damaging risk factors (Krieger et al. 1993; Krieger and Zierler 1995; Link and Phelan 1995; Williams et al. 1997; Denton and Walters 1999), we propose to test the hypothesis that material well-being is causally related to mental health. Recent research on the causes and course of

depression indicates that social and environmental factors, i.e. stressful life events and conditions, confer increased risk for its onset and recurrence (Checkley, 1996; McEwen, 1998; Frank and Thase, 1999). Although the possible bi-directionality the relationship between household material hardship and mental health must be considered, it is quite plausible that material hardship could adversely affect the mental health of unmarried parents. Material hardship may be subjectively experienced as stressful, and its presence or persistence could initiate or maintain feelings of self-blame and the perception that one is not efficacious. An individual's sense of mastery is largely a consequence of experiencing oneself as efficacious (Gecas and Schwalbe, 1983), and exposure to stressful life experiences can erode one's sense of mastery (Kraus and Tran, 1989). Likewise, the association between cumulative or persistent stressful life events or conditions and onset or chronicity of depression, particularly among single mothers with low self-esteem and lack of support, is well documented (Brown and Harris, 1978; Costello, 1982; Brown and Moran, 1997).

Data and Methods

Data

We analyze data from two waves of the Fragile Families and Child Wellbeing Study (FFCWS) a longitudinal survey of 4,700 families. The data are drawn to be representative of non-marital births in each of the nation's largest 20 cities as well as representative of non-marital births in US cities with populations over 200,000. Data will be used from the one-year and three year follow-up. A multi-staged sampling design was used to randomly sample cities, hospitals within cities, and then births within hospitals. Trained interviewers conducted face-to-face interviews with the mothers between February 1998 and September 2000. One year follow-up

interviews were conducted between June 1999 and March 2002 (Reichman et al. 2001). The data for both waves are publicly available via an internet connection at this time.

Measures

Measures of material hardship from the FFCWS include food insufficiency, telephone disconnection, difficulty paying bills, unmet medical needs, unstable housing, and housing problems. Mental health will assessed using indicators for major depressive disorder and generalized anxiety disorder based on the 12-month screening version of the World Health Organization's (WHO) Composite International Diagnostic Interview (CIDI) (WHO, 1990; Kessler et al., 1998). The CIDI is a structured interview schedule designed to be used by trained interviewers who are nonclinicians to assess the prevalence of specific psychiatric disorders (Robins et al., 1988). Additional controls will be included such as race, age, gender, physical health problems, domestic violence, income and employment, and household composition.

Model

In order to improve our ability to make casual inferences, we propose to estimate fixed effect models for the change in different forms of material hardship status on mental health status. A strength of the FFCWS is that information on poverty, hardship, and health are collected at two points in time in the survey. Separate models will analyze each form of mental health (depression and generalized anxiety disorder). Using fixed effect models has one principal advantage. By controlling for all individual-specific factors that are constant over time, it eliminates certain kinds of omitted variable biases in cross-sectional research (Powers and Xie, 2000). With ordinary least squares regression a component of the error term may be correlated

with other independent variables in the model. In this case, subjective accounts of material hardship could be correlated with unmeasured characteristics such as pessimism that might cause individuals to over-report material hardship and under-report income from various sources. As long as the unmeasured characteristics are static across time, using fixed effect models should produce estimates net of unmeasured heterogeneity.

Expected Findings

We anticipate findings in three different areas: First, we will determine which forms of material hardship are predictors of mental health problems. From prior research, we know that food insufficiency consistently is significantly related to poor mental health. It is unclear, however, if other forms of hardship will also have a strong relationship with mental health.

Second, we will determine to what extent the poverty-mental health relationship is being mediated by material hardship. We anticipate that a sizable (10-30 percent) portion of the poverty effect is due to experiences of material hardship.

Finally, we anticipate that racial differences in mental health may partly be explained by higher rates of material hardship among minority groups.

References

Adams, Peter, Michael Hurd, Daniel McFadden, Angela Merrill, and Tiago Ribeiro. 2003. "Healthy, Wealthy, and Wise? Test for Direct Causal Paths Between Health and Socioeconomic Status." *Journal of Econometrics* 112:3-56.

Alpert, Jonathan E., David Mischoulon, Andrew A. Nirenberg, and Maurizio Fava. 2000. "Nutrition and Depression: Focus on Folate." *Nutrition* 16:544-581.

Boushey, Heather, Chauna Brocht, Bethney Gundersen, and Jared Bernstein. 2001. *Hardships in America: The Real Story of Working Families*. Washington, D.C.: Economic Policy Institute.

Casey, Patrick, Susan Goolsby, Carol Berkowitz, Deborah Frank, John Cook, Dina Cutts, Maureen Black, Nieves Zaldivar, Suzette Levenson, Tim Heeren, Alan Meyers, and the Children's Sentinel Nutritional Assessment Program Study Group. 2004. "Maternal Depression, Changing Public Assistance, Food Security, and Child Health Status." *Pediatrics,* 113(2):298-304.

Ecob, Russell and George Davey Smith. 1999. "Income and Health: What is the Nature of the Relationship?" *Social Science & Medicine* 48:693-705.

Evans, Gary W., Nancy M. Wells, Annie Moch. 2003. "Housing and Mental Health: A Review of the Evidence and a Methodological and Conceptual Critique." *Journal of Social Issues* 59(3):475-5000.

Gecas, Victor, and Michael L. Schwalbe. 1983. "Beyond the Looking-Glass Shelf: Social Structure and Efficacy-Based Self-Esteem" *Social Psychology Quarterly* 46(2):77-88.

Hamilton, William L., John T. Cook, William W. Thompson, Lawrence F. Buron, Edward A. Frongillo, Christine M. Olson, and Cheryl A. Wehler. 1997. *Household Food Security in*

the United States in 1995. Technical report of the Food Security Measurement Project. Washington, D.C.: Food and Consumer Service, United States Department of Agriculture.

Heseker, H., Kubler, W., Pudel V., and Westenhoffer, J. 1992. "Psychological Disorders as Early Symptoms of Mild-to-Moderate Vitamin Deficiency." *Annals of the New York Academy of Sciences* 669:352-357.

Hopton JL and SM Hunt. 1996. "Housing Conditions and Mental Health in a Disadvantaged Are in Scotland." *Journal of Epidemiology and Community Health* 50:56-61.

Iceland, John and Kurt J. Bauman. 2004. "Income Poverty and Material Hardship: How Strong is the Association?" National Poverty Center Working Paper, #04-17 (December). http://www.npc.umich.edu/publications/workingpaper04/paper17/

Kessler, Ronald C., Katherine A. McGonagle, Shanyang Zhao, Christopher B. Nelson, Michael Hughes, Suzann Eshlemann, Hans-Ulrich Wittchen, and Kenneth S. Kendler. 1994. "Lifetime and 12-Month Prevalence of DSM-III-R Psychiatric Disorders in the United States." *Archives of General Psychiatry* 15:8-19.

Lynch, John, George Davey Smith, Sam Harper, Marianne Hillemeier, Nancy Ross, George Kaplan, and Michael Wolfson. 2004. "Is Income Inequality a Determinant of Population Health? Part 1. A Systematic Review." *Millbank Quarterly* 82(1).

Lynch, John, George Davey Smith, George A Kaplan, and James S. House. 2000. "Income Inequality and Mortality: Importance to Health of Individual Income, Psychosocial Environment, or Material Conditions." *BMJ* 320:1200-4.

McEwen, Bruce. 1998. "Protective and Damaging Effects of Stress Mediators." *New England Journal of Medicine* 338:171-179.

Nelson, Karin, Margaret E. Brown, and Nicole Lurie. (1998). "Hunger in an Adult Population." *JAMA* 279(15):1211-1214.

Reynolds, E.H. 2002. "Folic Acid, Aging, Depression and Dementia." *BMJ* 324:1512-5.

Tiemeier, Henning, H. Rudd van Tuijl, Albert Hofman, John Meier, Amanda J. Kiliaan, and Monique M.B. Bretler. 2002. "Vitamin B_{12}, Folate, and Homocysteine in Depression: The Rotterdam Study." *American Journal of Psychiatry* 159:12.