The Effects of Welfare and Child Support Policies on Maternal Health

Jean Knab
Princeton University

Sara McLanahan
Princeton University

Irv Garfinkel
Columbia University

Draft – 02/28/06

This paper was prepared for the annual meeting of the Population Association of America held in Los Angeles, CA on March 30-April 1, 2006.

The Effects of Welfare and Child Support Policies on Maternal Health

Jean Knab, Sara McLanahan, and Irv Garfinkel

Abstract: Previous research indicates that welfare reform policies – work requirements, sanctions, and child support enforcement – had negative consequences for mothers' health insurance coverage and use of health care service, but there is little evidence that these policies had negative effects on health. This paper examines the effects of post-reform welfare and child support policies on maternal health and health behavior using data from the Fragile Families and Child Wellbeing Study. Using evidence from OLS, fixed effects, and instrumental variables models, we find that policies that increase the likelihood of welfare participation are associated with increases in mothers' drinking, food insecurity and, possibly, depression, and that policies that increase the likelihood of child support receipt are associated with increases in drinking, depression, and poorer overall health. Together the results indicate that welfare and child support policies do affect maternal health, primarily by affecting mothers' mental health.

The Effects of Welfare and Child Support Policies on Maternal Health

Jean Knab, Sara McLanahan, and Irv Garfinkel

In 1996 the U.S. Congress passed the Personal Responsibility and Work Opportunities Reconciliation Act (PRWORA), substantially reducing a family's rights to income support. PRWORA removed the entitlement to government-provided cash assistance and increased states' incentives to reduce welfare caseloads. At the same time it increased private responsibilities by encouraging greater work effort from mothers and more child support payments from non-resident fathers.

The PRWORA provisions raised concerns within the medical community and among others interested in the health and wellbeing of at-risk families. By removing the entitlement to welfare, many advocates feared that poor women would lose their health insurance coverage. While PRWORA included a provision to hold Medicaid eligibility constant, the administrative barriers to staff and states and the confusing new rules suggested that many eligible women might lose coverage.

Other advocates expressed concern about the potential effects of welfare reform on maternal health. They feared that increased work requirements and stronger child support enforcement might increase maternal stress, leading to increases in mental health problems. They also expressed concern that stronger child support enforcement might expose mothers to more violence from fathers while stricter welfare requirements might make it harder for mothers to escape violent partners (Kaplan 1997). Finally, advocates feared that substance abusers and women with mental health problems would be disproportionately harmed by the new policies (APA 2001; Metsch and Pollack 2005).

Research to date has generally focused on the impact of welfare reform on the health insurance coverage and health care utilization of low-income women. As expected, studies have found that more restrictive welfare policies are associated with small reductions in health insurance and indications of less health care utilization (Bitler and Gelbach 2005; Holl, Slack and Stevens 2005; Kaestner and Kaushal 2003; Kaestner and Tarlov 2003). There is little evidence, however, that stricter welfare policies have had a negative impact on mothers' health. Indeed, one study found that reductions in welfare caseloads were associated with improvements in health behavior, specifically reductions in binge drinking and increased physical activity (Kaestner and Tarlov 2003).

This chapter replicates and extends previous work on the impact of welfare policies on maternal health in several ways. First, we examine a broader range of outcomes than has been covered in previous studies. Second we use data from a new longitudinal study of unmarried parents and their child, The Fragile Families and Child Wellbeing Study. To date, most of the research on the effects of welfare reform on maternal health has either used data from the Behavioral Risk Factor Surveillance System, a national data set, or data from one or a handful of states. Thus trying to replicate some of the previous analyses using a different national data set is a useful exercise. A third extension is that no previous study has looked at the effects of child support enforcement on health outcomes. Since stronger child support enforcement was part of welfare reform and since these two sets of policies may have complementary or offsetting effects on maternal health, it makes sense to examine them together. Finally, whereas all of the studies cited above look at the effects of welfare *reform* on maternal health, we examine the effects of post-PRWORA policies to determine if policies that

encourage high levels of welfare participation are associated with poorer maternal health and health behavior.

The Fragile Families and Child Wellbeing data have a number of strengths that make these data attractive for studying the effects of welfare and child support policies on maternal health. The study, which over-samples non-marital births and asks mothers a large array of questions about their health and health behaviors, provides extensive information on the population of women who are most likely to be affected by welfare and child support policies. Moreover, because the study is longitudinal, we are able to examine the association between changes in welfare use and changes in mothers' health (fixed effects models). Finally, the cities in the Fragile Families sample were drawn via a stratified random sample that was designed to capture the extremes of welfare and child support policies and labor market conditions. See Reichman et al (2001) for more detail on the study design. Thus, differences in state policies can be used as instruments to identify the effects of welfare and child support policies on maternal health.

The Fragile Families data also have limitations. Although the fixed effects models are an improvement over standard OLS models, they do not resolve all of the causality problems that arise from using observational data. In addition, the state policies that we use to identify the effects of welfare policies are measured only once, and therefore we cannot rule out the possibility that they are a proxy for some other variable that varies across states and affects maternal health.

BACKGROUND

What does theory tell us about the potential effects of welfare and child support policies on maternal health and health behavior? With respect to welfare policies, theory is ambiguous and suggests two potential causal pathways through which welfare might affect health. First, Aid to Mothers with Dependent Children, or 'welfare,' was designed to aid mothers in dire circumstances, and for this reason we would expect generous welfare policies to improve mothers' health, at least in the short run. Second, because welfare benefits are highly income-tested, they discourage work, which may lead to economic dependence in the long run. For this reason we might expect welfare policies to reduce mothers' health and increase negative health behavior. Finally, estimating the correct effect of welfare policies on maternal health is difficult because of a serious selection problem. Since welfare is a last resort for most mothers, those who turn to it for support are likely to be in poorer health than those who do not. Thus we would expect to find a negative association between welfare use and health.

With respect to child support, theory suggests that stronger child support policies should improve maternal health by improving the overall bargaining positions of mothers and by improving total income in the long run. In contrast, the effect of child support enforcement on mothers who depend on welfare is likely to be negative, since these mothers have little say in whether or not the father is ordered to pay child support and since child support dollars may not increase their income, at least in the short run. Strong child support enforcement may actually reduce the income of mothers on welfare if they have been receiving informal transfers from the father. Formal child support payments often substitute for informal payments and typically go to the state rather than to the

mother (Nepomnyaschy and Garfinkel 2005). Most importantly, strong child support enforcement may increase in conflict between mothers and non-resident fathers, which is expected to have negative effects on maternal health and health behavior. As in the case of welfare, estimates of the effects of child support policies on maternal health are likely to be biased by selection into the child support system. For non-welfare mothers, selection should be positive; that is, the most able and most healthy mothers should be the most likely to obtain a child support award. For mothers on welfare, however, selection should go in the opposite direction since welfare is selective of the least healthy mothers.

Empirical evidence

As noted in the introduction, the empirical research on the impact of welfare and child support policies on maternal health and health behavior is very limited. Although a number of studies have examined the association between welfare participation and maternal health, much of this literature is descriptive. The most frequently studied health outcome is depression, and here the causal evidence is weak (Lennon, Blome and English 2002) although some studies suggest a causal pathway (Ensminger 1995). A study by Currie and Cole (1993) that focuses primarily on child outcomes, finds that selection into AFDC accounts for nearly all of the link between welfare participation and maternal smoking or drinking during pregnancy. Research on the link between child support enforcement and maternal health is even more limited than research on the effects of welfare policies.

The welfare reform act of 1996 stimulated some research on the effects of more restrictive welfare policies on maternal health, but most of this research focused on health

insurance coverage, and to a lesser degree, on health care utilization and health behaviors. By and large, the evidence from this body of work suggests that tougher (more restrictive) welfare policies are associated with a loss of health insurance (Bitler and Gelbach 2005; Chavkin, Romero and Wise 2000; Kaestner and Kaushal 2003), and for many this loss is sustained over several years (Holl et al. 2005). There is also some evidence that stricter policies lead to reductions in health care utilization (Bitler and Gelbach 2005; Kaestner and Kaushal 2003; Kaestner and Lee 2005) and increases in unmet health needs (Bitler and Gelbach 2005; Polit, London and Martinez 2001).

Despite the loss of health insurance and more restricted use of services, however, there is little to no evidence that more restrictive welfare policies are associated with poorer health or mental health overall (Kaestner and Tarlov 2003). Among welfare recipients, there is some evidence that health outcomes such as hypertension, obesity, cholesterol, etc. are worse after welfare reform, but these results are based on a pre-post comparison of one state's welfare population compared with a national sample (Kaplan et al. 2005).

With respect to health behavior, the evidence is mixed. On the negative side, there is some evidence that tougher welfare policies and stricter work requirements reduce breastfeeding which is positively associated with maternal and child health. According to one study, breastfeeding would have been 5.5 percent higher in the absence of welfare reform (Haider, Jacknowitz and Schoeni 2003). There is also evidence that stronger child support enforcement is associated with increases in domestic violence, especially among mothers on welfare (Fertig, Garfinkel and McLanahan 2004). On the positive side, researchers have found that reductions in welfare caseloads (resulting from more

restrictive policies) are associated with improvements in maternal health behavior, specifically reductions in binge drinking and increases in physical activity (Kaestner and Tarlov 2003).

DATA AND METHODS

In this chapter, we use data from the Fragile Families and Child Wellbeing Study (hereafter "Fragile Families") to examine the effect of welfare and child support policies on maternal health outcomes. The Fragile Families study is following a cohort of approximately 5,000 births in 20 large U.S. cities between 1998 and 2000. Mothers were interviewed around the time of a child's birth, with follow-up interviews occurring around the child's first and third birthdays. At baseline, the Fragile Families sample included 1,186 married mothers and 3,712 unmarried mothers whose response rates were 82 percent and 87 percent respectively. Most of the health outcomes and behaviors are measured at the three-year follow-up. Therefore, we restrict the sample to mothers who responded to the three-year survey (N = 4,231 or 87 percent of mothers interviewed at baseline who remained eligible at the three-year follow-up). We exclude 1,051 mothers who were married at their child's birth as they are not the target population of these policies. We also drop 378 immigrants from the sample because Fragile Families does not have data on the immigrants' legal status and welfare policies are applied differentially to legal immigrants depending on the date of their arrival. Finally we drop 266 cases with missing data on one of our key measures or the one-year follow-up interview (used in the fixed effects), resulting in a final sample of 2,536 mothers.

Maternal health and health behaviors

Health outcomes and behaviors are measured at the three-year follow-up interview unless noted. For the fixed effects analyses, we present results for which we have repeated measures at the one- and three-year follow-up interviews. Unfortunately, we do not have comparable measures at baseline to allow us to include that wave in the fixed effects estimation.

We look at three measures of health inputs. Similar to the measures from the BRFSS, we look at indicator variables for whether the *mother had any health insurance* (private or Medicaid) and whether the mother reported *anyone in the household didn't go to doctor or hospital because he/she couldn't afford it*. As a lack of stable health insurance is associated with unfavorable health outcomes among working-age adults (IOM), this could be an important consequence of welfare reform. Because nutrition is an important health input that has been shown to impact women's health, e.g. mental health (Heflin, Siefert and Williams 2005; Siefert et al. 2004) and obesity (Olson 1999), we also look at *hunger*. We do not have a full food insecurity scale. Therefore, we present results for an indicator of whether or not the mother reports she or her child went hungry at the one-year follow-up.

We look at two measures of overall health and wellbeing. The first is a categorical indicator of *overall health*, which is measured by a question that asks mothers whether they would describe their health as "excellent, very good, good, fair, or poor" with 1 representing excellent health and 5 representing poor health. The second is an indicator for whether the mother was *depressed or anxious*. This indicator is derived from the Composite International Diagnostic Interview Short Form or CIDI-SF (Walters et al.

2002). Respondents are classified as depressed if they report having feelings of dysphoria or anhedonia in the past year lasting for two weeks or more and if the symptoms lasted most of the day and if they occurred everyday during the two week period. Respondents are classified as anxious if they report feeling excessively worried or anxious about more than one thing, more days than not, and had difficulty controlling their worries. See CRCW (2006) for more information on how this measure is constructed.

Finally, we examine five stress-related behaviors that may impact women's health outcomes and might be affected by welfare or child support policies, including alcohol or drug dependence, binge drinking, smoking, parental conflict, and domestic violence. An indicator for *alcohol or drug dependence* is derived from the CIDI-SF (Walters et al. 2002). Respondents are classified as being alcohol dependent if they had at least four drinks in one day and reported at least three out of the seven following symptoms: 1) role interference as a result of use, 2) use in hazardous situations, 3) emotional or psychological problems as a result of use, 4) a strong desire or urge to drink, 5) a great deal of time using or recovering, 6) drinking more or longer than intended, or 7) drinking more to get the same effect. Respondents are classified as drug dependent if they used at least one of the following drugs (sedatives, tranquilizers, amphetamines, analgesics, inhalants, marijuana, cocaine, LSD, and heroin), and reported three out of the seven symptoms describe above for alcohol. We also include a less restrictive measure of alcohol abuse, specifically binge drinking. Binge drinking is defined as having four or

more drinks in one day.[1] We also have a measure of *smoking* (defined as any smoking in month prior to the one-year follow-up).

Finally, we examine two measures of parental conflict: arguing and domestic violence. For the first measure, mothers were asked how often they *argue with the child's father* on a scale of 1 representing "always" and 5 representing "never." We reverse-code this item so that higher equals more arguing. For the second measure, mothers were asked if they were "slapped or kicked" or "hit with a fist or object that could hurt you" "often, sometimes, or never." Mothers who said they experienced any of these forms of violence "often or sometimes" by the child's father or their current romantic partner are classified as having experienced domestic violence.

Table 1 shows the prevalence of health and stress-related outcomes and behaviors and outcomes in the sample. Most of the mothers in the sample have health insurance (75 percent), although a substantial minority (25 percent) is not covered by health insurance at the three-year follow-up. A lack of health insurance coverage may contribute to future health problems if it inhibits mothers from seeking preventative care (Institute of Medicine 2002). Only 7 percent of mothers report that someone in their household did not go to a doctor or hospital when they needed to in the past year because they could not afford it. This is not surprising given that such a high percentage of mothers is covered by insurance. Note however that this finding means that nearly one-third of mothers without health insurance (7 percent of 25 percent) are not seeking medical treatment when they (or their family) need it. Five percent of mothers report that they or children went hungry compared to 3 percent nationally (Nord et al. 2002).

[1] At the one-year follow-up, binge drinking is classified as having five-drinks or more.

Mothers in the sample report poor health overall. On a scale of 1 to 5, where 1 represents "excellent" health and 5 represents "poor" health, the average score is 2.31. This number translates to an average of somewhat less than "very good" health. Thirteen percent of our mothers report being in "fair or poor" health as compared to 5 percent of a national sample of women aged 18-34. Mothers in our sample also report high rates of depression and anxiety (23 percent). Rates of depression and anxiety can vary widely depending on how they are measured, but our estimates are in line with estimates of depression among mothers with young children (Heneghan et al. 1998; Jayakody and Stauffer 2000) and much lower than those found in some other studies (Hall et al. 1991; Mulvaney and Kendrick 2005).

Using strict definitions of dependence, rates of alcohol and drug dependence are low (2 percent) in our sample of unmarried mothers. However, rates of binge drinking are considerably higher (12 percent). Smoking rates are particularly high (35 percent) as compared with national estimates of 21 percent for females over 18 in 2000-2002 (NCHS 2004).

On average, mothers report arguing with the child's father between "sometimes" and "often." Eleven percent of mothers report that the child's father or a current partner has slapped, kicked, or hit them. These are rates of current and recent violence, as opposed to ever experienced violence, so the prevalence is lower than it would have been if we had included all prior experience. Our estimates are in-line with community samples of low-income women and on the lower side of these (Tolman and Raphael 2000).

Table 1: Means of key measures

	Unweighted Percent/Mean
Health inputs and outcomes	
Has health insurance (%)	75.0
Didn't go to doctor/hospital because couldn't afford it (%)	7.0
Mother or child went hungry[1] (%)	4.9
Overall health (high = poor) (mean)	2.31
Depressed/anxious (%)	24.5
Stress-related behaviors	
Alcohol/drug dependent (%)	1.7
Binge drinking (%)	11.8
Smoking[1] (%)	34.7
Argues with child's father (high = more) (mean)	3.15
Domestic violence (any partner) (%)	11.1

N = 2,536

Notes:

Sample includes only mothers unmarried at the focal child's birth.

[1] Measured at the one-year follow-up

Measuring the effects of welfare and child support policies and practices

Our analysis strategy is three-fold. First, because welfare and child support policies have their most proximate effects via causing mothers to either be on welfare or to receive child support dollars, we look at the relationships between welfare and child support receipt and maternal health behaviors and outcomes. Our measure of *welfare receipt* is an indicator for whether the mother reported receiving any income from TANF in the 12 months preceding the three-year follow-up. Our measure of *child support receipt* is an indicator for whether the mother reported receiving any child support dollars from the focal child's father or the father of a different child. We control for individual

level characteristics that may be associated with welfare receipt and health but are exogenous to welfare and child support receipt, specifically mother's age, race/ethnicity, education, and parity. We recognize that the associations between health and welfare and child support receipt are biased estimates of the effects of policies on health because poor health contributes positively to welfare receipt and most likely negatively to child support receipt. Thus the observed relationships provide upper bound estimates of the effects of welfare and child support policies on health.

Next, for outcomes for which we have repeated measures at the one- and three-year follow-up interviews, we estimate individual fixed effects models in which the dependent variable is the change in health status and the key independent variables are the change in welfare and child support receipt. This more restrictive model looks at changes associated with moving into welfare and child support net of observed and unobserved stable characteristics of the mother. However, the association between observed changes in welfare and child support receipt and health does not deal with the more serious bias of reverse causation, namely that changes in health status or behavior may lead to changes in welfare receipt.

One strategy for obtaining unbiased estimates of the effects of policies on health is to estimate a reduced form model in which welfare and child support policies across cities and states are the key independent variables. Because so many different welfare and child support policies and practices affect welfare and child support receipt in each city and state and because we have only 20 cities in 15 states, we adopt the alternative strategy of using instrumental variables. We use welfare and child support policies and practices as instruments to predict welfare and child support receipt.

More specifically we use welfare rules and the strength of child support enforcement as instrumental variables that determine welfare and child support receipt. In doing so, we assume that these policies are not correlated with health outcomes except through their effects on welfare and child support receipt. The instrumental variables will be unbiased if the child support and welfare policies that are used to identify the child support and welfare predictions are uncorrelated with unobserved city variables that are correlated with health. To check for the exogeneity of the regressors, we compute a test of over-identifying restrictions using Hansen's J-statistic.

Our welfare instruments are measured by two elements of welfare generosity: 1) the maximum TANF + FS benefit and 2) the harshness of sanctions for non-compliance. The maximum TANF + FS benefit is calculated for a family of three with no other income in 1999 (obtained from the State Policy Documentation Project (www.spdp.org). This term is divided by $100 in the models. We also include a squared term to capture non-linear effects of TANF benefits. To measure sanctioning policy we use a variable that categorizes whether a state's sanctioning policies were lenient (1), moderate (2), or stringent (3) as categorized by Pavetti and Bloom (2001). Stringent sanctions indicate that a state imposes immediate full-family sanctions or imposes gradual full family sanctions with an immediate 100 percent reduction in Food Stamp benefits or elimination of Medicaid. Moderate sanctions indicate that a state imposes gradual full-family sanctions with no sanction of Food Stamp benefits or Medicaid or a partial sanction with a 100 percent sanction on Food Stamp benefits. Lenient sanctions indicate that a state imposes partial sanctions with < 100 percent sanction on Food Stamp benefits. We tried incorporating alternative measures of welfare generosity including time limits, sanction

amounts, work requirements, earnings disregards, but these variables were not significant and thus we did not include them in the model.

To measure the strength of child support enforcement we use an index that combines measures of the legal framework, state expenditures on enforcement, and a practice measure that captures states' actual performance in collecting child support. The index was constructed by Nepomnyaschy and Garfinkel (2005). The legal framework incorporates three groups of laws: (1) three laws pertaining to paternity establishment (allowing paternity to be established until the child is 18, mandating genetic testing and making voluntary paternity conclusive), (2) universal wage withholding, and (3) the three most recent federally mandated laws (the New Hires directory, license revocation for nonpayment, and automation). Paternity establishment is the pre-requisite for enforcing support among the unmarried, while previous research has found universal withholding to be the single most important enforcement tool. Finally, because all of these laws were mandated by the federal government during the eighties and early nineteen nineties, the index also includes the three most recently mandated laws. For each law, the year that the law became effective in the state is entered, then standardized to have a mean of 0 and a standard deviation of 1, and inverted, so that the longer the laws have been on the books, the greater the value. Each index represents the average score for each state on that set of measures. Total state expenditures on child support enforcement in 1999 were divided by the state population and were also standardized. The final component is an adjusted payment rate ratio from 2000 city-level Census data. The ratio is constructed by regressing the probability that an unmarried mother received any child support on the mother's race/ethnicity, age, education, nativity, parity, presence of child under age 6,

state-level median male wage and maximum combined TANF/FS benefit in the state. From this equation, an aggregate city-level probability of receiving support is predicted, and the raw aggregate probability of receiving support is divided by this adjusted measure. This measure is also standardized.[2]

The welfare and child support policies for the states in the Fragile Families sample are displayed in Table 3, along with the percent of mothers who received welfare in the past year and the percent of mothers who receive child support. Maximum TANF plus Food Stamps benefits ranged from $526 to $907. Nine states had stringent sanction policies, 3 had moderate and 3 had lenient sanction policies. The combined effect of the generosity of these welfare policies can be observed in the variation in mother's rates of receiving welfare in the past year. Receipt rates generally rise with the generosity of TANF and food stamp benefits and the leniency of sanctions. We also observe a strong relationship (particularly at the tails) between the strength of the state's child support enforcement (which is adjusted for the demographic composition of the state) and the percent of mothers' receiving child support. On the whole, states had an average of 30 percent of mothers receiving welfare in the past year and 28 percent receiving child support.

[2] The Census does not specifically ask about child support income. We proxy child support income with the "other income" category in the Census. Creating a similar category in the SIPP data, we calculated that over 90% of "other income" for unmarried mothers consists of child support payments. Therefore, we feel quite confident that the "other income" category is an acceptable child support proxy for this group of mothers.

Table 2: Welfare and child support policies by state

State	Max TANF +FS /$100	Sanction policies	Child support enforcement index	Received welf past year	Receives child support
Texas	5.3	Moderate	-0.215	19%	30%
Tennessee	5.6	Strict	-0.602	30%	28%
Indiana	6.2	Lenient	-0.397	34%	21%
Virginia	6.2	Strict	0.657	27%	33%
Florida	6.3	Strict	-0.006	15%	46%
Illinois	6.8	Moderate	-0.826	31%	15%
Maryland	6.9	Strict	-0.297	25%	26%
Ohio	6.9	Strict	1.766	32%	49%
Pennsylvania	7.3	Moderate	0.021	37%	26%
New Jersey	7.4	Strict	0.741	35%	26%
Michigan	7.7	Strict	0.709	30%	25%
Massachussetts	8.5	Strict	0.187	44%	34%
New York	8.6	Lenient	-0.325	37%	18%
California	8.7	Lenient	0.162	37%	21%
Wisconsin	9.1	Strict	1.947	30%	43%
All states in sample	7.0	Mod/Strict	0.248	30%	28%

The results from our first stage regressions are presented in Table 2. The F-statistics for the test of the joint significance of the four instruments are large (20.6 and 66.7) and statistically significant at the $p <= .05$, level indicating that even after controlling for individual-level characteristics, the instruments are significant predictors of welfare and child support receipt. As expected, both higher TANF and Food Stamp benefits and more lenient sanctions are associated with greater welfare receipt, although the relative impact of high benefits declines with higher levels of welfare benefits. Similarly, the strength of child support enforcement is strongly related to the likelihood of receiving child support. Both measures of welfare generosity are associated with lower levels of child support receipt and considered jointly they are significant at the $p <= .01$ level. This result is not surprising if mothers view TANF as an alternative to child support. What is surprising is that, contrary to what has been found in other studies, strict child support enforcement is not associated with a reduced probability of receiving welfare in the past year. However, if we specify welfare as current receipt or total

welfare dollars received, the sign on the child support enforcement coefficient is negative though insignificant.

Table 3: First-stage regression equations

	Received welfare	Received child support
Mother characteristics		
White	-0.148 **	-0.003
	(.027)	(.020)
Hispanic	-0.114 **	-0.016
	(.021)	(.022)
Age	-0.039 *	0.028 *
	(.019)	(.012)
Age^2	0.001 ^	-0.001 ^
	(.000)	(.000)
Less than high school degree	0.126 **	0.004
	(.024)	(.028)
Any college education	-0.080 **	0.058 **
	(.019)	(.023)
Two children	0.081 *	0.087 *
	(.034)	(.038)
Three or more children	0.153 **	0.089 **
	(.041)	(.026)
Instruments		
Max TANF+FS 1999	0.223 *	-0.203 ^
	(.105)	(.107)
$(\text{Max TANF+FS 1999})^2$	-0.014 ^	0.012
	(.008)	(.008)
Sanctions (higher = stricter)	-0.051 *	0.040
	(.022)	(.016)
C.S. enforcement (higher = stronger)	0.001	0.087 **
	(.029)	(.022)
Constant	0.126	0.573
	(.377)	(.361)
F-statistic	20.6	66.7
p of F-statistic	0.047	0.015

Notes:
Robust standard errors in parentheses. Standard errors clustered at state level.
** p<0.01; * p<0.05; ^ p<0.10 two tailed

Individual level characteristics predict welfare and child support receipt in a manner consistent with previous research. Relative to Black mothers, White and Hispanic mothers receive less welfare and less child support. Mother's age is negatively associated with receiving welfare, but positively associated with receiving child support.

Mother's education is negatively associated with welfare receipt, but not associated with receipt of child support. Higher parity raises the likelihood of receiving welfare and child support.

RESULTS

In the first part of the analysis, we examine the relationship between observed welfare and child support receipt and maternal health and health behaviors using OLS regression and controlling for a set of individual characteristics (Table 4). In terms of the demographic characteristics of mothers, White and Hispanic mothers report higher rates of hardship, binge drinking, and domestic violence than Black mothers. Increasing age is associated with increased depression/anxiety, but less parental conflict and domestic violence. Having higher education is associated with better health outcomes and behaviors, while having more children is associated with higher rates of smoking.

In terms of our variables of interest, receiving welfare is associated with greater health insurance coverage. This is not surprising as the process for getting Medicaid is more straightforward for mothers on welfare than mothers who are not on welfare (Gold 1999). Despite being associated with greater access to health insurance, as expected, welfare receipt is associated with a host of poor health outcomes and health behaviors. Mothers who received welfare in the last year report worse overall health, higher rates of depression and anxiety, and greater levels of food insecurity. For instance, mothers who received welfare had rates of depression and anxiety 8 percent higher than mothers who did not receive welfare last year. Welfare receipt is also associated with higher rates of stress-related behaviors including greater alcohol and drug dependence, smoking,

Table 4: OLS models predicting effects of welfare and child support receipt on maternal health and health behaviors

	Health insurance	No doctor	Hungry	Overall health	Depressed/ anxious	Alc/drug dependent	Binge	Smoke	Argues	Domestic violence
Received welfare last year	0.215 **	-0.006	0.040 **	0.106 *	0.077 **	0.017 *	-0.016	0.056 **	0.090 ^	0.038 *
	(.017)	(.011)	(.011)	(.050)	(.021)	(.007)	(.014)	(.021)	(.059)	(.015)
Receives child support $	0.005	0.000	-0.020 *	0.034	0.008	-0.008	0.012	-0.046 ^	0.247 **	0.026 ^
	(.018)	(.011)	(.010)	(.048)	(.020)	(.005)	(.014)	(.024)	(.045)	(.015)
White	-0.087 **	0.065 **	0.033 *	0.103 ^	0.038	0.009	0.117 **	0.270 **	-0.031	0.049 **
	(.025)	(.017)	(.014)	(.057)	(.025)	(.008)	(.021)	(.027)	(.055)	(.019)
Hispanic	-0.136 **	0.026 ^	0.001	0.104 ^	-0.025	-0.012 **	0.086 **	-0.023	-0.025	0.037 *
	(.023)	(.014)	(.010)	(.054)	(.021)	(.004)	(.018)	(.023)	(.052)	(.017)
Age	-0.005	0.006	-0.001	0.020	0.029 *	-0.004	-0.003	0.009	-0.059 ^	-0.019 ^
	(.013)	(.008)	(.006)	(.034)	(.014)	(.005)	(.010)	(.016)	(.033)	(.011)
Age squared	0.000	0.000	0.000	0.000	-0.001 *	0.000	0.000	0.000	0.001	0.000
	(.000)	(.000)	(.000)	(.001)	(.000)	(.000)	(.000)	(.000)	(.001)	(.000)
LT high school	-0.050 *	0.012	0.012	0.097 ^	0.034 ^	-0.007	-0.027 ^	0.127 **	0.026	0.018
	(.020)	(.013)	(.010)	(.052)	(.021)	(.007)	(.015)	(.023)	(.051)	(.016)
Any college	0.039 ^	0.023 ^	0.017	-0.093 ^	0.010	-0.001	0.010	-0.075 **	0.013	-0.007
	(.022)	(.014)	(.010)	(.051)	(.022)	(.007)	(.017)	(.023)	(.051)	(.015)
Two children	-0.022	0.024	0.017	0.113 ^	0.031	0.005	-0.028 ^	0.085 **	-0.140 *	0.010
	(.025)	(.016)	(.013)	(.064)	(.026)	(.007)	(.017)	(.028)	(.057)	(.018)
Three+ children	-0.073 **	0.019	0.012	0.123	0.044	0.012	0.008	0.119 **	0.024	0.066 **
	(.028)	(.019)	(.015)	(.077)	(.030)	(.010)	(.020)	(.033)	(.072)	(.023)

** p<0.01; * p<0.05; ^ p<0.10 two tailed

parental arguing, and domestic violence. Mothers who received welfare were 4 percent more likely to report domestic violence by a partner than mothers who did not receive welfare.

Child support receipt is not associated with as many maternal health behaviors and outcomes as welfare receipt. Receiving child support is associated with reductions in reporting having gone hungry and child support is associated with higher rates of parental conflict and domestic violence, which is consistent with previous findings on the effects of strong enforcement (Fertig et al. 2004).

Table 5 presents results from the OLS, fixed effects, and IV regressions. We have re-oriented Table 5 to present the key independent variables (welfare receipt and child support receipt) across the top and the key outcome variables in the left hand side column. Structuring the table in this way facilitates comparisons across the models. The results from the fixed effects models show the association between changes in welfare and child support receipt and changes in health outcomes between the one- and three-year follow-ups (roughly a two-year time span) and are not available for all of our health measures. For welfare, the fixed effects estimates indicate that increases in welfare receipt are associated with increases in access to health insurance, which is consistent with both theory and previous research. The rest of the coefficients are small in size and none are statistically significant. For child support, the estimates indicate that increases in child support receipt are associated with increases in maternal depression (significant at the .10 level).

As discussed above, the fixed effects estimates will be biased to the extent that causation runs from changes in health to changes in welfare and child support receipt. Therefore we use instrumental variables to predict mothers' welfare and child support receipt and to determine whether welfare and child support policies affect mothers' health

and wellbeing. The IV models allow us to eliminate unobserved characteristics of the parents that may be correlated with welfare and child support receipt and with maternal health.[3] The interpretation of the instrumental welfare and child support variables is that they measure the generosity of welfare policies and practices and the stringency of child support enforcement policies and practices. That is, considering the generosity of TANF and Food Stamp benefit levels and sanction policies, the more generous the welfare policies in a city, the more likely mothers are to receive welfare. Similarly, the more stringent the child support policies and practices in a city, the more likely mothers are to receive child support. For these models, we use two-stage least squares estimation, with standard errors clustered at the state level. As discussed in the methods section, the F-statistics in the first stage equations are large and significant (20.6 and 66.7) indicating that even after controlling for individual-level characteristics, the instruments are good predictors of welfare and child support receipt.

When we look at the IV models, the first thing to note is that the magnitude of the coefficients is much larger than in it is in the OLS and fixed effects models. Such large coefficients for IV estimates are relatively common. The variation in generosity of welfare and stringency of child support enforcement is much smaller than the variation in welfare and child support receipt. Second, even though our first stage results suggest that we have valid instruments of welfare and child support receipt, as is common in instrumental variables analyses, the predicted receipt variables generated by instrumental variables models are estimated with less precision than the observed receipt variables which means that the standard errors are larger and hence it is more difficult to achieve

[3] We could not estimate models for health insurance and smoking model as they were overidentified because other factors at city level that predict welfare receipt and health insurance coverage are not captured by our instruments.

statistical significance with the IV estimates. A number of estimates below are close to but do not achieve statistical significance at the 10 percent level.

Table 5: OLS, Fixed Effects and second-stage IV results for effects of welfare and child support receipt on maternal health and health behaviors

	Received welfare last year			*Receives child support*		
Outcome	***OLS***	***FE***	***IV***	***OLS***	***FE***	***IV***
Health inputs and outcomes						
Has health insurance	0.215 **	0.136 **	--	0.005	-0.015	--
	(.017)	(.021)		(.018)	(.024)	
No doctor/hospital-couldn't afford	-0.006	0.005	-0.285	0.000	0.006	-0.014
	(.011)	(.011)	(.207)	(.011)	(.013)	(.119)
Mother or child went hungry	0.040 **	n/a	0.145	-0.020 *	n/a	0.012
	(.011)		(.152)	(.010)		(.249)
Overall health (high = poor)	0.106 *	-0.018	0.319	0.034	0.021	0.988 **
	(.050)	(.048)	(.329)	(.048)	(.052)	(.348)
Depressed/anxious	0.077 **	0.013	0.409	0.008	0.037 ^	0.388 ^
	(.021)	(.021)	(.264)	(.020)	(.021)	(.230)
Stress-related behaviors						
Alcohol/drug dependent	0.017 *	n/a	0.102 ^	-0.008	n/a	0.034
	(.007)		(.062)	(.005)		(.044)
Binge drinking	-0.016	-0.013	0.175	0.012	0.015	0.315 ^
	(.014)	(.014)	(.347)	(.014)	(.018)	(.172)
Smoking	0.056 **	n/a	0.932 ^	-0.046 ^	n/a	0.978 *
	(.021)		(.487)	(.024)		(.463)
Argues with father (high = more)	0.090 ^	n/a	0.167	0.247 **	n/a	0.428
	(.059)		(.545)	(.045)		(.357)
Domestic violence (any partner)	0.038 *	0.004	-0.105	0.026 ^	0.017	-0.025
	(.015)	(.016)	(.134)	(.015)	(.017)	(.076)

Robust standard errors in parentheses. Standard errors clustered at state level.
-- means the model is overidentified. Hansen J-statistic signficant at 10 percent level or below.

Still, the coefficients from the instrumental variables models suggest that welfare generosity is associated with higher rates of depression and anxiety, greater alcohol and drug dependence, and higher rates of smoking. These findings suggest that more generous cash assistance may be leading to higher rates of maternal stress, which manifests through higher rates of depression, anxiety, and alcohol and drug dependence, and smoking. [The coefficient for depression and anxiety is not statistically significant, but the point estimate is large and in the expected direction.] Welfare generosity may cause mothers to go on welfare at greater rates and to remain on welfare longer, which could decrease work and dependence on family members, increase isolation and thereby increase depression, anxiety, and self-medication. These results are consistent with other

research that examines the impacts of welfare receipt on mother's wellbeing (Casey et al. 2004; Ensminger 1995; Jayakody, Danziger and Pollack 2000).

The child support results suggest that stronger child support enforcement is also associated with higher rates of maternal stress-related behaviors and outcomes. Stronger child support enforcement is associated with higher rates of maternal depression and anxiety, higher rates of binge drinking, and smoking, and lower levels of subjective health. All of these outcomes could operate through higher rates of parental conflict. Although the coefficient for conflict is not statistically significant, the effect is large and in the expected direction.

DISCUSSION AND CONCLUSIONS

This chapter examines the effects of welfare and child support policies on maternal health and health behaviors using data from the Fragile Families and Child Wellbeing Study. Initially we argued that theory was ambiguous with respect to how generous welfare policies, defined as policies that encourage welfare participation, might be expected to affect maternal health. On the one hand, welfare was designed to alleviate mothers' financial problems, in which case policies that make it easy for a woman to obtain welfare should reduce stress and improve health. On the other hand, by encouraging economic dependence and lack of structure, welfare participation may actually increase stress and reduce maternal health.

According to the IV results presented here, more generous welfare policies are associated with increases in drinking and smoking and, possibly, depression. These results are consistent with a story in which welfare dependence enables dysfunctional behavior (drinking, smoking, and drug use) and poorer mental health (depression).

We also argued that the effects of strong child support enforcement were ambiguous for unmarried mothers, especially those at risk for being on welfare. Whereas strong child support enforcement might be expected to increase the incomes of mothers in the long run, it may actually reduce income in the short term by replacing informal support paid to the mother with formal child support paid to the state (Nepomnyaschy and Garfinkel 2005). Moreover, since low income mothers are required to cooperate with the child support system in identifying non-resident fathers, stronger enforcement may lead to greater conflict between unmarried parents thus further increasing stress. Although the effect of child support on conflict is not statistically significant in the IV models presented here, the coefficient is large and in the expected direction. Again, the findings presented here are consistent with a story in which stricter child support enforcement increases drinking, smoking, and depression and ultimately to poorer overall health. Here the most likely mechanism is parental conflict. These two sets of findings are consistent insofar as both imply that income transfer policies have their greatest impact via mental health and mental health behavior.

Our analysis has several limitations which should be kept in mind when interpreting the results. First, the OLS and fixed effects estimates are problematic because of selection, and many of the coefficients from the IV models are not measured precisely. Thus our results should be viewed as suggestive. Second, all of our health variables are measured by mothers' reports, which means that they are subjective and may be affected by response bias. The fact that the policies affect some of these measures, particularly those that might react the quickest to being on welfare or receiving child support, and not others indicates to us that response bias is not a serious problem. And finally, the policy instruments we use in this analysis are measured at only one point in time and thus our estimates of their effect are based on between-city differences in policies rather than

within city changes in policies over time. Since policies may themselves be endogenous, we cannot rule out the possibility that the effects attributed to welfare and child support policies are due to some unmeasured characteristics of the city other than these two sets of policies.

Despite these caveats, we believe that our analysis makes a unique contribution to the literature by documenting the potential negative health effects of welfare and child support policies on a sample of low income mothers of young children – the very mothers these policies are intended to help. Insofar as our results hold up in future analyses, they indicate that more attention should be given to the 'unanticipated consequences' of income transfer policies.

REFERENCES

American Psychological Association. 2001. "Mental Health Issues in TANF Reauthorization." Memo to the U.S. Dept of Health and Human Services. Washington, D.C.

Bitler, M.P. and J.B. Gelbach. 2005. "Welfare reform and health." *Journal of Human Resources* 40(2):309-334.

Casey, P., S. Goolsby, C. Berkowitz, D. Frank, J. Cook, D. Cutts, M.M. Black, N. Zaldivar, S. Levenson, T. Heeren, A. 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.

Center for Research on Child Wellbeing. 2006. "Scales Documentation and Question Sources for the Fragile Families Three-Year Follow-Up." Princeton, NJ.

Chavkin, W., D. Romero, and P.H. Wise. 2000. "State welfare reform policies and declines in health insurance." *American Journal of Public Health* 90(6):900-908.

Currie, J. and N. Cole. 1993. "Welfare and Child Health - The Link Between AFDC Participation and Birth-Weight." *American Economic Review* 83(4):971-985.

Ensminger, M.E. 1995. "Welfare and psychological distress: A longitudinal study of African American urban mothers." *Journal of Health And Social Behavior* 36(4):346-359.

Fertig, A., I. Garfinkel, and S. McLanahan. 2004. "Child Support Enforcement and Domestic Violence among Non-Cohabiting Couples." *Center for Research on Child Wellbeing Working Paper #2002-17.* Princeton University.

Gold, R.B. 1999. "Implications for Family Planning of Post-Welfare Reform Insurance Trends." *The Guttmacher Report on Public Policy* 2(6):6-9. New York: The Alan Guttmacher Institute.

Haider, S.J., A. Jacknowitz, and R.F. Schoeni. 2003. "Welfare work requirements and child well-being: Evidence from the effects on breast-feeding." *Demography* 40(3):479-497.

Hall, L.A., D.N. Gurley, B. Sachs, and R.J. Kryscio. 1991. "Psychosocial Predictors Of Maternal Depressive Symptoms, Parenting Attitudes, And Child-Behavior In Single-Parent Families." *Nursing Research* 40(4):214-220.

Heflin, C.M., K. Siefert, and D.R. Williams. 2005. "Food insufficiency and women's mental health: Findings from a 3-year panel of welfare recipients." *Social Science & Medicine* 61(9):1971-1982.

Heneghan, A.M., E.J. Silver, L.J. Bauman, L.E. Westbrook, and R.E.K. Stein. 1998. "Depressive symptoms in inner-city mothers of young children: Who is at risk?" *Pediatrics* 102(6):1394-1400.

Holl, J.L., K.S. Slack, and A.B. Stevens. 2005. "Welfare reform and health insurance: Consequences for parents." *American Journal of Public Health* 95(2):279-285.

Insititute of Medicine. 2002. "Care Without Coverage: Too Little, Too Late." Washington, D.C.: National Academies Press.

Jayakody, R., S. Danziger, and H. Pollack. 2000. "Welfare reform, substance use, and mental health." *Journal of Health Politics Policy and Law* 25(4):623-651.

Jayakody, R. and D. Stauffer. 2000. "Mental health problems among single mothers: Implications for work and welfare reform." *Journal of Social Issues* 56(4):617-634.

Kaestner, R. and N. Kaushal. 2003. "Welfare reform and health insurance coverage of low-income families." *Journal of Health Economics* 22(6):959-981.

Kaestner, R. and W.C. Lee. 2005. "The effect of welfare reform on prenatal care and birth weight." *Health Economics* 14(5):497-511.

Kaestner, R. and E. Tarlov. 2003. "Changes in the Welfare Caseload and the Health of Low-Educated Mothers." in *NBER Working Paper*.

Kaiser, L.L., M.S. Townsend, H.R. Melgar-Quinonez, M.L. Fujii, and P.B. Crawford. 2004. "Choice of instrument influences relations between food insecurity and obesity in Latino women." *American Journal of Clinical Nutrition* 80(5):1372-1378.

Kaplan, A. 1997. "Domestic Violence and Welfare Reform." *Welfare Information Network Issue Notes* 1(8). Washington D.C.: The Finance Project.

Kaplan, G.A., K. Siefert, N. Ranjit, T.E. Raghunathan, E.A. Young, D. Tran, S. Danziger, S. Hudson, J.W. Lynch, and R. Tolman. 2005. "The health of poor women under welfare reform." *American Journal of Public Health* 95(7):1252-1258.

Lennon, M.C., J. Blome, and K. English. 2002. "Depression Among Women on Welfare: A Review of the Literature." *Journal of the American Medical Women's Association* 57(1):27-32.

Metsch, L.R. and H. Pollack. 2005. "Welfare Reform and Substance Abuse." *The Milbank Quarterly* 83(1):65-99.

Mulvaney, C. and D. Kendrick. 2005. "Depressive symptoms in mothers of pre-school children." *Social Psychiatry And Psychiatric Epidemiology* 40(3):202-208.

National Center for Health Statistics. 2004. "Health, United States, 2004 With Chartbook on Trends in the Health of Americans." Hyattsville, Maryland.

Nepomnyaschy, L. and I. Garfinkel. 2005. "The Relationship between Formal and Informal Child Support: Evidence from Fragile Families Three-Year Data." in *Association for Public Policy and Management Annual Meeting*. Washington, DC.

Nord, M., N. Kabbani, L. Tiehen, and M. Andrews. 2002. "Household food security in the United States, 2000." Washington, DC: Economic Research Service, U.S. Dept of Agriculture.

Olson, C.M. 1999. "Nutrition and health outcomes associated with food insecurity and hunger." *Journal of Nutrition* 129(2):521S-524S.

Pavetti, L. and D. Bloom. 2001. "State Sanctions and Time Limits." Pp. 245-269 in *The New World of Welfare*, edited by R.M. Blank and R. Haskins. Washington, DC: Brookings Institution Press.

Polit, D.F., A.S. London, and J.M. Martinez. 2001. "The Health of Poor Urban Women: Findings from the Project on Devolution and Urban Change." New York: MDRC.

Reichman, N.E., J.O. Teitler, I. Garfinkel, and S.S. McLanahan. 2001. "Fragile Families: Sample and Design." *Children and Youth Services Review* 23(4-5):303-326.

Siefert, K., C.M. Heflin, M.E. Corcoran, and D.R. Williams. 2004. "Food insufficiency and physical and mental health in a longitudinal survey of welfare recipients." *Journal of Health and Social Behavior* 45(2):171-186.

Tolman, R.M. and J. Raphael. 2000. "A review of research on welfare and domestic violence." *Journal Of Social Issues* 56(4):655-681.

Walters, E.E., R.C. Kessler, C.B. Nelson, and D. Mroczek. 2002. "Scoring the World Health Organization's Composite International Diagnostic Interview Short Form (CIDI-SF)." World Health Organization.