

**THE EFFECTS OF CHILDREN WITH DISABILITIES ON MOTHERS' EXIT
FROM WELFARE¹**

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Introduction

This paper examines the hypothesis that mothers receiving AFDC are less able to exit welfare if their family includes one or more children with disabilities. The Personal Responsibility and Work Opportunities Reconciliation Act (PRWORA) changed the welfare system by abandoning the policy of unconditional and potentially long-term cash assistance of Aid to Families with Dependent Children (AFDC). The alternative program, Temporary Assistance for Needy Families (TANF), mandates a lifetime federal limit on benefits of five years, with recipients required to work after two years. A child may be identified as disabled because of inability or difficulty in essential daily life skills involving mobility, communication, or self-care. A child may also be regarded as disabled because of mental retardation or a learning limitation. The burden of care for a child with a disability is one factor in some mothers entering the welfare system, and is hypothesized to limit their ability to exit.

Families of children with disabilities are more likely to face unusual demands on economic resources, but may more often be unable to work because of the special demands required to care for their children. This is particularly the case for single parent families. Mothers of children with disabilities more often never marry or divorce, and are less likely to remarry, than mothers of children without disability. These concerns about constraints on employment, greater family needs for economic resources and health care, and the greater likelihood that single mothers of children with disabilities will remain single jointly lead to the hypothesis that unmarried mothers receiving welfare will be less able to exit welfare if they have children with disabilities. Welfare reform expects mothers on welfare to find work, stay employed, organize child care, and eventually build a private safety net for themselves. This basic expectation--to get a job and keep it--is hypothesized to be harder to meet for welfare mothers raising children with disabilities than for other mothers, and that this particular group of welfare mothers represent some of the hard-to-employ.

Background

Child Disability

Our attention to children with disability fits well with the recent national attention to disability among children. This increased attention to child disability occurred for several reasons. First, the Americans with Disability Act has focused national attention on disabled Americans, the role of social organizations and physical structures in the impact of disabilities on such basic activities as going to school, participating in the labor force, and the potential for rehabilitation and enablement. Second, the increased number of very low birth-weight infants, and the dramatically improved survivorship of these children and other children with chronic medical conditions, has increased the number of children with high risk of disability. Third, recent attention to such emergent childhood

afflictions as Attention Deficit/Hyperactivity Disorder and the increased diagnosis of asthma has expanded the risk pool for children with disabilities. Fourth, the costs of continuing recently developed programs to support the healthy and productive development of children with disabilities (and assisting their families) have increased greatly due to expansion in the number of children eligible and to increasing costs associated with each enrolled child.

Legislated mandates (Americans with Disabilities Act of 1990, and 1991 Individuals with Disabilities Education Act [representing a continuation and expansion of the 1975 Education for All Handicapped Children Act]) have focused attention on the identification, measurement, and analysis of children with disabilities. Following the adoption of the Americans with Disabilities Act, the National Center for Medical Rehabilitation Research was established within the NICHD in “the realization that the health care of people with disabilities needs to be improved for people with disabilities to join their fellow Americans in living productive, meaningful, and enjoyable lives” (NIH, 1993). To advise NICHD and NIH in this mission, a National Advisory Board on Medical Rehabilitation Research was established. The Board noted that epidemiological and demographic research on disability lacked standardized conceptualization and measures, and lacked a scientific knowledge base on the family environments of persons with disabilities.

Since then a handful of population-based demographic studies of child disability have been completed. That research shows that a sizable proportion of American children experience some form of limitation in mobility, self-care, communication, or learning. Estimates vary by data source and definition of disability, but the central fact that many children living at home have a disability is inescapable. Using data from the Survey of Income and Program Participation (SIPP), Adler (1995) estimated that in 1990 about seven percent of all children younger than 18 years of age had a disability. McNeil (1997), using data from a later panel of SIPP that asked more detailed questions about disability in children, reported that in the mid-1990s approximately eight percent of preschool-aged children had a disability and nearly 13 percent of children between the ages of 6 and 14 had some form of disability. Hogan, Msall, Rogers & Avery (1997) using the 1994/95 National Health Interview Survey on Disability (NHIS-D) estimated that 12 percent of school-age children had some form of disability.

Child Disability and the Family

The organization of families, (structure, number of adults and children, employment, and sources of income), jointly help to determine whether children grow up impoverished, dependent on welfare, unable to access health care services, or experience a family environment that is supportive of age-appropriate growth, social skills, and cognitive development (Hanson, McLanahan, & Thompson 1997). What is perhaps less recognized is that the households of children with disabilities more often are headed by unmarried mothers and in poverty (Hogan, Rogers & Msall 2000). They are also more likely to be welfare dependent. The 1996 SIPP panel used in this analysis indicates that 14% of unmarried mothers not on welfare are raising children with disabilities compared

to 20% of mothers on welfare. This is because children born to these families are somewhat more likely to be disabled and because of family adjustments to children with disability.

Several studies, many based on clinical populations, by disability specialists and family researchers over the past few decades have examined the challenges families face when raising a child with a disability. Many of these studies focus on the stress associated with the child's disability (Beckman-Bell 1981; Boyce, et al. 1991; Snowdon, Cameron, & Dunham 1994; Thyen, Kuhlthau, & Perrin 1999; Yatchmenoff, et al. 1998). These studies consistently find parents raising a disabled child do experience more stress than do parents raising a non-disabled, same-age child. There is mixed evidence whether parents more often separate or divorce because of a child's disability, and whether the likelihood of doing so varies by type of disability and the child's ability with age-appropriate roles (Mauldon 1992; Joesch and Smith 1997).

Besides stress and marriage instability, studies have identified other negative outcomes associated with child disability in the family, including decreased maternal employment (Breslau, Salkever, & Staruch 1982; Lukemeyer, Meyers, & Smeeding 2000; Salkever 1982; Thyen et al. 1999), increases in the amount of time spent on child care and housework (Breslau 1983), an increased likelihood of financial problems (Hodapp & Krasner 1994; Jacobs & McDermott 1989; Lukemeyer et al. 2000; Thyen et al. 1999); and disrupted sleep (Kirk 1998; Knoll 1992).

Child disability has also been associated with difficulties in a parent's ability to sleep through the night. Knoll (1992), in a qualitative study of families with disabled children, found that nearly one-fourth of the families experienced major sleep disruption due to the nighttime care of their disabled child. Furthermore, Kirk (1998) reviewed a number of studies and found that a consistent theme is the parents' reports of sleep deprivation. This has been attributed to anxiety over the child's condition, as well as false monitor alarms and the need to remain vigilant over the child during the night. Most of the studies reviewed, however, were small-scale studies of technology-dependent children.

A child with a disability often requires extensive care that is not readily or easily procured from someone outside the family (Darling 1987; Knoll 1992). This often necessitates that a parent, (usually the mother), reduce their participation in the labor force or even withdraw altogether (Breslau et al. 1982). This response, however, is sometimes not an option for single-parents. Both Breslau and her colleagues (1982) and Salkever (1982) found that there was no effect of child disability on single mothers' labor force participation (Breslau et al. 1982; Salkever 1982), nor their time spent on housework or child care (Breslau 1983). Breslau suggests that these findings are due to the single mother's inability to reduce the number of hours she works or drop out of the labor force altogether, and that any nonmarket time she has is already spent in nondiscretionary activities, leaving her with little flexibility to allocate more time to the care of her disabled child.

Using nationally representative survey data from the NHIS-D, Rogers and Hogan (2001) looked at parental reports of consequences they attribute to their child's disability. Twenty-three percent of families with children with a disability have at some time experienced one or more job changes due specifically to the child's health. Eight percent experienced 1 job change, 5% experienced 2 changes, and nearly 10% experienced 3 or more changes. Nearly 5% of families reported severe financial problems in the past year linked to their child's disability. Just over 7% of the children's families reported changed sleeping patterns. More than one-fourth of the families reported one or more of these three consequences. Nearly 20% experienced only one of the three consequences, 5.7% experienced two, while 1.5% experienced all three consequences.

Besides the time demands placed on the family when either directly caring for their disabled child or traveling to medical and therapy appointments, there are direct costs that families face. Much of the research on the topic are small-scale studies of children with specific illnesses, such as cancer, spina bifida, or cystic fibrosis (Houts et al. 1984; Jacobs & McDermott 1989; Lansky et al. 1979). These studies find that the direct costs of care and rehabilitation can be quite high.

Newacheck & McManus (1988) use nationally representative population data to assess the out-of-pocket expenses for caring for disabled children (see also Altman, Cooper, and Cunningham 1999). They find that, on average, the out-of-pocket medical expenses paid directly by families with disabled children are nearly double that for non-disabled children. A treatment requiring a device can also be costly just for the equipment and, if required, the medication. A recent study by Anna Lukemeyer and her colleagues (2000) of California AFDC families with children with disabilities and chronic illnesses found that medical care and special equipment were the most common reasons for major (greater than \$100) expenditures. They also reported that over one-third (38%) of families spent over \$100 on non-child-care expenses (such as unreimbursed medical expenses) in the month prior to the study. Newacheck & McManus (1988) suggest that many families find it difficult to afford insurance premiums and often choose to either forego needed care or to spend down family assets to achieve eligibility for public insurance coverage such as Medicaid. For children with disabilities the usual financial advantages of private insurance do not apply—publicly provided medical insurance routinely pays for rehabilitation that private insurance covers poorly, if at all (Hogan, Lima & Msall 2001).

Rogers and Hogan (2001) using the NHIS-D report that it is the monetary and time costs of the rehabilitation, rather than the child's disability per se that accounts for many of the negative consequences associated with child disability. But the employment and income consequences are larger for better educated women who were employed full-time and have accumulated financial resources that are thus subject to loss.

Exits from Welfare under TANF

Despite the pervasiveness of child disability and its known association with socioeconomic and demographic features of family life, researchers studying welfare

dependency until recently had not focused on the impact of a child's disability on the mother's ability to work and remain off welfare. Mothers with medical conditions that last more than a year, and are blind or have a physical or mental impairment that keeps a person from performing any substantial work, and meet the means-tested criteria, are eligible to be enrolled in Supplementary Security Income (SSI); they are not subject to the new welfare eligibility and work requirements under TANF. Children with an impairment that results in marked and severe functional limitations are SSI eligible (Gardiner and Fishman 2001). Meyers, Brady, and Seto (2001) in a major study of childhood disabilities and welfare used a survey of California welfare families and administrative data to show that about ten percent of the welfare recipient households include a child with a disability and that this was a barrier to welfare exits. Danziger et al (1999) used the 1997 Women's Employment Survey to show that a health problem of a child is one barrier to mother's employment. Meyers et al. (2001) conclude their study by suggesting that families with disabled children will become an increasing portion of the remaining case load (the hard-to-employ), and that more needs to be learned about these families. One important point these researchers make is that, as noted above, children with disabilities more often come from families with less human capital, are single-parent or are very poor. It is important to control for these associated characteristics (including the mother's) own disability, in trying to assess the net impact of a child's disability.

We build on this previous research to address, with new data and a fresh perspective, key questions for policy makers concerned about child disability. These are how great is the impact of a child with a disability on a mother's exit from welfare, and does the presence of a child with a disability exacerbate the exit from welfare for women with their own disability. This research on the impact of children with disabilities on welfare improves on prior research in (a) its focus on a nationally representative population of women on welfare, (b) its use of longitudinal data that captures the month-to-month dynamics of welfare and exits from welfare, (c) its inclusion of human capital variables known to be related to exits from welfare, including whether mothers are disabled, (d) information on the state-level generosity of welfare and job opportunities (state-level unemployment rate), (e) dynamic models that include consideration of unobserved heterogeneity and duration dependence, and (e) its careful measurement of child disability.

Data Description

The primary source of data for this study is the 1996 Survey of Income and Program Participation (SIPP), a 48 month longitudinal, nationally representative, stratified random sample of the U.S. population. Respondents are interviewed every four months over a period of four years. At each interview a household informant is asked to provide demographic, employment, income, and program participation information for every member of the household for each of the past four months (U.S. Bureau of the Census, 2001).

The survey design permitted identifying all unmarried women over 15 in the sample with one or more children, the month they entered the panel and, if they left, the month they left. The survey also gathered much demographic information on the unmarried mothers and their children, which was essential for our study. The information included unmarried mothers' age, race or ethnicity, earnings, employment status, educational attainment, and disability status, as well as their participation in public assistance programs, such as the AFDC program. A vast amount of information was collected on children, including comprehensive information on types of disabilities. And, information on the number of families in an unmarried mother's household and the composition of each family at each of the preceding four months was gathered. Families who moved were located, if possible, and retained in the survey.

The survey also identified for each month the state in which a mother resided. As we knew the state in which that family resided, we attached to each person-month record the state-specific maximum monthly AFDC benefit level available to a family of four and the annual state unemployment rate. The state level AFDC benefits were measured in current dollars and culled from data published by the U.S. House of Representatives (1998).

The SIPP's design allowed us to identify if and at what month the unmarried mother left the AFDC program. We did not count as two separate spells of AFDC participation the few occasions when one month of nonparticipation separated adjacent months of AFDC participation. Presumably, as Bank and Ruggles have noted (1994) such occurrences reflect coding errors or "administrative churning."

We limited the SIPP sample to unmarried mother families for two reasons. First, previous research suggests that few two-parent families receive AFDC income (Moffitt, 1992) and consistent with that research, we find that only about 2 percent of married mothers (N = 146) receive AFDC. Second, including two-parent families would have increased the complexity of the analysis given that we would also have had to consider the possibility of paternal disabilities and their effects on AFDC exits without providing information relevant to the focus of our study: the effects of child disability on AFDC exits of mothers.

Altogether, there were 10,440 mothers in the 1996 SIPP. Nearly 27 percent of those mothers were unmarried mothers (N = 2,764) with children 17 years of age and younger. Among the unmarried mothers, about 21 percent (N = 638) reported that they had some sort of condition preventing them from working and about 34 percent (N = 931) reported that they had participated in the AFDC program. Of the 931 unmarried mothers who participated in the AFDC program, 627 (67.3 percent) were receiving AFDC from the beginning of the panel. The remaining 304 entered the AFDC program after the survey began. Background analyses showed no demographic differences between these two groups of unmarried mothers. Within 24 months of entering welfare or entering the panel on welfare, 571 or about 61 percent of the 931 unmarried mothers who received AFDC during the panel had left the program.

The dependent variable, “mother exited AFDC”, is an indicator coded 1 if the unmarried mother left the AFDC program that month and 0 otherwise. The months for each unmarried mother were arranged in temporal order beginning with the first month the mother appeared in the survey and ending when the mother left the AFDC program, when the mother left the survey, or when the survey ended. The variable “mother exited AFDC” is censored when it is coded 0 and indicates that the unmarried mother is still “at risk” of leaving the AFDC program.

The disabilities of unmarried mothers and their children are the chief independent variables for the study. We measure parent and child disabilities at wave five of the 1996 SIPP survey (in 1997). The 1996 SIPP uses both the functional limitation concept and the concept of inability or limitation in performing a social role or task in forming its definitions of disabilities for adults and children. In wave five of the SIPP survey, a disability topical module collected information regarding both functional impairment and inability or limitations in performing a social role or task, which is then used to determine mothers’ and children’s disability status. The types of information collected as it relates to mothers and children are as follows: whether mothers or children use a wheelchair, a cane, crutches, or a walker; whether either finds it difficult or is unable to communicate, lift everyday household items, or ambulate; whether either finds it difficult or is unable to use the telephone; whether either finds it difficult with, or needs the help of, another person with self-care or socializing; and, whether either has a learning disability, mental retardation, any other development disability, or mental or emotional condition. Importantly, for the purposes of our study, none of the unmarried mothers reported receiving SSI. This means that the disabilities of children we examine ordinarily will not meet SSI criteria, being a subset of the all children with disability.

We also include, as an indicator of parental ability, the parent’s education. Since the effect of years of education was nonlinear, we classified years of education according to five categories: less than high school, high school only, some college, an associates degree, or a college degree. Other demographic variables included in the analysis are age of the mother and age category of the child and the race or ethnicity of the mother. The latter was coded in five categories: Non-Hispanic white, Non-Hispanic black, Hispanic, Asian, and Other.

Statistical Model

Possessing monthly data permitted using a discrete-time duration model that estimated the effects of the variables listed above on the probability of a unmarried mother exiting the AFDC program. We assume that a continuous time, proportional hazards model has generated our observations, but because the data are grouped into monthly intervals, we use a discrete hazard model to estimate the contribution of the independent variables to the hazard. Prentice and Gloeckler (1978) show that a discrete hazard model generates unbiased estimates of the coefficients of a continuous time proportional hazards model.

In the discrete hazard model, the time until the mother exits the AFDC program has a discrete distribution with values at 1, 2, 3, and so on, indicating the month in which the mother exited. The hazard of the mother exiting at some point between month t and $t + 1$ is assumed to be constant over the interval between t and $t + 1$, although the hazard may vary from one time interval to the next. In discrete time, the hazard is the conditional probability that the mother will leave in month t given that she has not left before month t . In a direct analogue to the proportional hazards model (Cox 1972), we assume that the independent variables multiplicatively increase or decrease the hazard of dissolution.

Thus, the hazard rate for a given set of independent variables, X_1, X_2, \dots, X_k , is $P_t = 1 - \exp[-\exp(\alpha_t + \beta_1 X_{1,t} + \beta_2 X_{2,t} + \dots + \beta_k X_{k,t})]$ (Prentice and Gloeckler, 1978; McCullagh and Nelder, 1989). The dependent variable, “mother exited AFDC”, is assumed to have a binomial distribution with mean P_t . The mean of the dependent variable is linked to the independent variables through the complementary log-log function $\ln(-\ln(1 - P_t)) = \alpha_t + \beta_1 X_{1,t} + \beta_2 X_{2,t} + \dots + \beta_k X_{k,t}$.

Right censoring (the mother does not leave during the risk period) is accommodated by the Prentice and Gloeckler (1978) discrete hazard model. Left censoring, however, presents a problem for hazard models that cannot be fully solved. About two-thirds (67 percent) of the mothers who received welfare were receiving AFDC when the survey began. The first month observations of these mothers are left censored, because we have no information on the covariates for the months before the survey began in which they were receiving AFDC. Since most of these mothers did not leave the AFDC until well into the panel, i.e., after month 12 we believe that the bias in the estimates of the coefficients that may result from left censoring is reduced. Estimates of a model (not reported here) using a dummy variable to indicate left censored observations scarcely differ from estimates of a model with no adjustment for left censoring, indicating that left censoring does not create a significant level of bias in these data.

Unobserved heterogeneity can also bias the coefficients of a hazard model, particularly those specifying the behavior of the hazard over time. The estimated hazard rate becomes biased toward negative duration dependence (Heckman and Singer, 1984). We adjusted for unobserved heterogeneity embodied in the omitted variables by introducing into the Prentice-Gloeckler (1978) model a gamma mixture distribution to summarize unobserved individual heterogeneity as proposed by Meyer (1990).

Findings

Description of the sample

Table 1 presents descriptive statistics of the characteristics of the 2,764 unmarried mothers in the sample. In Table 2, separate statistics are provided for unmarried mothers entering the AFDC program and for those not entering the AFDC program. The means and percentages reported in Table 1 describe only the sample, not the U.S. population,

since they are calculated from unweighted and oversampled data (U.S. Bureau of the Census, 2001).

[Table 1 about here]

These unmarried mothers were in their mid-thirties caring mostly for one or two children. The majority were white, but with a substantial minority black or Hispanic. One in five had not completed high school and nearly another one in three had not completed college. A sizable number of these mothers reported having some sort of disability, as did their children. Excluding emotional conditions, about fifteen percent of the mothers had at least one of four types of disability (communication, mobility, self-care, or cognitive), and about 15 percent of the children had at least one of four types of disability (communication, mobility, self-care, or cognitive). A total of 873 of the 2,764 unmarried mothers (32%) participated in the AFDC program and exited before the end of the survey.

Table 2 uncovers the important differences among unmarried mothers according to their AFDC participation, and the length of time they receive AFDC. As we noted earlier, because passage of the PRWORA considerably changed the eligibility rules for cash assistance, especially its mandated time limits and work requirements, in Table 2 we distinguish between AFDC-participating mothers who left the program within two years of entering the panel or began during the panel, and those who left after two years or were still on welfare at the end of the panel. For discussion purposes, we call the former shorter-term participants and the latter longer-term participants.

Unmarried mothers who never participated in the AFDC program (at least during the panel period) are different from shorter-term and longer-term AFDC-participating mothers. Non-participants compared to participants, (shorter- and longer-term), are older, less likely to have never married, have fewer children and fewer younger children, more household income, and higher levels of educational attainment. Significantly, far fewer unmarried mothers who never participated in the AFDC program possessed any of the five types of disabilities than the unmarried mothers who participated in the AFDC program. For example, compared with 10% of the non-recipients had an emotional disability compared to 22% of the short-term AFDC recipients and 26% of the longer-term recipients. Seven percent of the non-AFDC mothers have a mobility limitation compared to 13% of the short-term recipients and 22% of the longer-term recipients. Thus both types of welfare mothers are more likely than women never receiving AFDC to have a disability, and disability seems especially high among mothers who have difficulty leaving AFDC.

Unmarried mothers who never entered the AFDC program are generally less likely to care for a child with a disability (14%) compared with unmarried mothers who entered the AFDC program (20%). There is no overall difference in the percentage raising a child with a disability even though each type of child disability is somewhat more common among the long-term AFDC mothers. (This indicates more of these longer-term AFDC mothers raise children with multiple disabilities.)

Another way of characterizing differences in disability status among participating and non-participating unmarried mother families is to compare configurations of mother and child disabilities within the family. In other words, families headed by unmarried mothers can include no family members with a disability; or, these families can have only a mother who has one or more of the five types of disabilities; or these families can have only a child who has one or more of the five types of disabilities; or these families can have at least a child and a mother sharing one or more of the five types of disabilities.

Comparing across these configurations of disabilities within the family shows clearly that the configurations matter and that are large differences across unmarried mother families with respect to disability configurations and AFDC participation. Seventy-eight percent of the mothers who were never on AFDC are without disability in their household (self or child). This compares to 67% of short-term AFDC recipients and 60% of long-term recipients. The two AFDC recipient groups have few substantive differences in disability configuration, but the longer-term recipients more often include a mother who is disabled with no child disabled.

[Table 2 about here]

Estimates of Effects

Table 2 offers insights into the prevalence of disabilities within families headed by unmarried mothers who participate and do not participate in the AFDC program, and the family configuration of disability, replicating the findings of client record based studies. However, these associations do not indicate whether disability status among mothers and children, or configurations of disability within these families, impede unmarried mothers' exits from the AFDC program, something for which client record based studies are not well-equipped. Yet that crucial issue is foremost on the minds of policymakers who want to understand why some welfare-dependent mothers cannot leave welfare, get jobs, and keep them. Using population-based data for unmarried welfare mothers from the SIPP and the statistical model that we described earlier (that controls for individual, family, and contextual factors), we next estimate the effects of disability status among children (Table 3) and possible configurations of disabilities within families (Table 4) on unmarried mothers' exits from the AFDC program. By doing so, we will address this fundamental yet understudied policy issue. Tables 3 and 4 present parameters of the discrete proportional hazards model predicting the risk of AFDC exits from the variables identified in Table 1.

One of our hypotheses is that the challenges associated with parenting a child with a disability will decrease the likelihood welfare-dependent mothers will achieve economic independence and exit welfare. The coefficients for child disability in Table 3 do not support this hypothesis. Three of the four measured coefficients indicate that welfare mothers with children with a given disability are no less likely to leave welfare than mothers whose children lack that disability. The only coefficient for child disability that approaches significance ($p=0.12$) is that for the communication disabled, and shows that mothers with such children have substantially lower rates of welfare exit than mothers whose children are

not limited in communication. Indeed, the size of the coefficient for child communication limitation is larger than associated with any of the five measures of mothers' disability. Unmarried mothers with mobility limitations have lower rates of exit from welfare. Mothers' communication limitations are nearly significant ($p=.10$), with a coefficient about like that of communication limitation among children.

[Table 3 about here]

These findings for the net impact of maternal and child disability on mothers' exits from welfare, suggest that the associations observed for these variables with welfare-dependency, especially long-term welfare dependence, are causally linked only for mothers' mobility limitations, and perhaps the communication limitations of mothers and children. While the mothers and children with the worst disabilities are selected out of this population we still expected stronger measured effects for maternal disability given the weight of findings that mothers with disabilities do have greater difficulties finding work and keeping jobs. The sample size we are working with is not large, and the prevalence of certain types of disabilities is not large, either. For example, there are 25 mothers and 12 children with self-care limitations. The estimates for particular types of disabilities in Table 2 may thus not provide a good test of the hypothesis that child disability, (and maternal disability), reduce rates of exit from welfare.

We therefore decided to estimate a model in which there is a single measure of disability for mothers and for children. After exploratory analysis we decided it was appropriate to also measure the interaction between these variables to see if the family configuration of disability matters. In Table 4 we re-specify the model of Table 3 eliminating the variables measuring particular types of disability and adding variables indicating if the mother, child, or both have disabilities (the comparison is to welfare mothers who are without disability themselves or among their children. The findings in Table 4 provide much stronger support for the hypothesis that child disability matters. The coefficient for child disability compared to families in which there is no disability (either mother or child is $-.21$ ($p=.07$). In cases where the mother only is disabled the coefficient is $-.25$ ($p=.02$). These effects of mother disability and child disability on rates of exit from welfare are strong and of equivalent size. The models, however, show no evidence of a cumulative effect associated with both a mother and her child being disabled ($-.24$) compared to the coefficients for child disability and maternal disability alone. Indeed there seems to be no additive effect for maternal and child disability. Mothers with a disability or with a child with a disability have a lower rate of AFDC exit than families with no disability experience, but having both types of disability experience poses no unique situation of disadvantage. It is noteworthy that these effects are observed in a population of welfare mothers from which the most disabled mothers and children enrolled in SSI would be excluded.

[Table 4 about here]

Simulations of the Effects of Disability on AFDC Exit Rates

From the coefficients in Table 4 we calculate the risk of unmarried mothers exiting the AFDC program for the four configurations of disabilities within families and varying levels of AFDC benefits (Figure 1), unemployment rates (Figure 2), and household income (Figure 3). Since the risk of exiting depends on variables in the hazard model, we simulate the effects of configurations of disabilities for four hypothetical, but typical mothers: white unmarried mothers who are only high school graduates and 32 years old, and who have an eight year old child.

Figures 1 and 2 illustrate the general point that disabilities within welfare-dependent families are associated with lower rates of AFDC exits. Eventually, as AFDC benefit levels become more generous, or as unemployment rates increase, the exit rates from welfare for all unmarried mothers converge to near zero. However, when AFDC benefits and unemployment rates are low to moderate, there are substantially lower exit rates between families with alternative types of disability configurations and families with none. Clearly, as Figures 1 and 2 depict, and as shown by Table 4, differences in exit rates among families with alternative configurations of disability are minor. Whether a mother is herself disabled or has a disabled child, her rate of exit from AFDC is substantially less than that of women who have no family experience of disability. For a mother whose child is disabled being disabled herself does not add to her disadvantage. For a mother who is herself disabled, having a child who is disabled has no impact on the rate of welfare exit.

[Figures 1 and 2 about Here]

Figure 3 compares the risks of exiting AFDC across the four configurations of disabilities within the family as household income increases. The figure suggests that as household income increases exits from AFDC increase at about the same rate for all unmarried mother families. However, at each income level the probability of exiting welfare are always lower for families with disability. Figure 3 again depicts that the differences in exit rates among families with alternative configurations of disability are minor. At increased levels of household income the exit rate from welfare increases but this rate of increase is lower for mothers who are themselves disabled or who have a disabled child. But the exit rates for either type of disability are not further reduced when both the mother and child are disabled.

[Figure 3 about Here]

Other findings

The aim here was examining effects of child disability on exits from the AFDC program. To keep that focus, the discussion has refrained from elaborating on other factors determining AFDC exits among unmarried mothers. The important point to note, however, is that the other findings complement findings reported in the literature. (See, for instance, Moffitt, 1992; Moffitt, 1994; Harris, 1996; Blank and Ruggles, 1994;

Danziger, Sandefur, and Weinberg, 1995; and Brandon, 1995). Specifically, educational attainment, race, more children, AFDC benefit levels, unemployment rates, and household income are associated with the probability of unmarried mothers exiting the AFDC program.

Conclusions

To our knowledge this is the first population-based analysis of welfare mothers to investigate the impact of child disability on rates of exit from AFDC, taking into account factors known to influence AFDC exits, including maternal disability. Our initial attempt to examine the consequences of each type of child disability on exits from welfare lacked the power necessary to adequately address this question. A model that specified the effects of any child with a disability on rates of exit from welfare confirmed that there are substantial effects in the expected direction. Indeed, the coefficient for reduction in the rate of welfare exit associated with child disability (contrasted with a family in which no disability is present) is similar to that for mother's disability. This finding is very important for policy makers because it indicates that an accurate assessment of the ability of unmarried mothers to exit welfare requires knowledge of the presence of children with a disability, as well as of the mother's own disability experience. The financial and time constraints imposed on families with a child who has a disability are considerable. The specific needs of a child with a disability can make exceptional demands on the mother, often making it very difficult to take and keep a job. These constraints are as great as those of mothers who have a disability that makes it difficult to work and exit welfare. If a mother's chance to leave welfare is negatively impacted either by child disability or maternal disability, there is no greater risk associated with both the mother being disabled and the child having a disability. Thus, either type of disability experience in itself substantially lowers the chance of welfare exit. As these differences in exit rates persist over time, they result in large differences in the proportion of mothers still on welfare.

This research builds on prior client record based studies by demonstrating that the presence of a child with a disability appears causally linked to reduced rates of mothers' exits from AFDC. It is clear that women with children with disabilities are over-represented among welfare mothers, especially among welfare mothers who are among the hard-to-employ. Success in moving these mothers from welfare may depend on the availability of specialized services for the children, including medical insurance coverage, financial reimbursement for unusual medical and household expenses, and specialized childcare coverage. Such services may be partially implemented through programs that supplement AFDC or, alternatively, it may be appropriate to consider reclassifying the children with disabilities to receive SSI, thereby removing this portion of the hard-to-employ from the TANF population. Any attempt to implement such a policy would require additional research that examines how the severity of child disability (for children who are not now SSI qualified) affects the likelihood that a welfare mother can realistically be expected to exit AFDC.

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Table 1. Definitions of Variables Used and the Descriptive Statistics for the Sample of Unmarried Mothers^a

<u>Variable</u>	<u>Definition^b</u>	<u>Mean</u>	<u>SD</u>
Age	Age of mother in years	35.3	8.5
White	1 if mother is Non-Hispanic white, 0 otherwise	.55	
Black	1 if mother is Non-Hispanic black, 0 otherwise	.28	
Hispanic	1 if mother is Hispanic, 0 otherwise	.14	
Asian	1 if mother is other Asian, 0 otherwise	.02	
Other	1 if mother is other race/ethnicity, 0 otherwise	.01	
Never married	1 if mother has never been married, 0 otherwise	.35	
High school dropout	1 if mother did not complete high school, 0 otherwise	.21	
High school graduate	1 if mother is a high school graduate, 0 otherwise	.36	
Some college	1 if mother had some college, 0 otherwise	.29	
College plus	1 if mother is at least a college graduate, 0 otherwise	.10	
Assoc. degree	1 if mother completed an associate degree, 0 otherwise	.04	
No. of children	No of children in the household	1.81	1.01
Preschoolers only	All children in household are below five years of age	.19	
Elementary school-age only	All children in household are between six and 14 years of age	.19	
High-school age only	All children in household are between 15 and 17 years of age	.62	
Income	Total monthly household income (thousands of dollars) ^d	\$2,241.31	2,095
South	1 if live in South, 0 otherwise	.24	
Northeast	1 if live in Northeast, 0 otherwise	.35	
West	1 if live in West, 0 otherwise	.19	
Unemployment rate	State unemployment rate in 1997	5.5	
AFDC	Maximum monthly state AFDC amount for a family of four ^d	\$389.48	0.42
Emotional	Emotional anxious interferes with social life, ability to concentrate or cope, 0 otherwise	.14	
Communication ^c	1 if mother reports limited communication: difficulty seeing, hearing, speaking, 0 otherwise	.04	
Mobility ^c	1 if mother reports limited mobility: uses cane, wheelchair; cannot get out of bed, climb stairs, or lift items without difficulty, 0 otherwise	.10	
Self-care ^c	1 if mother reports difficulty caring for self ,i.e., needs help with bathing, dressing, eating, and toileting, 0 otherwise	.01	
Cognitive ^c	1 if mother reports limited cognitively: reports a learning disability or mental retardation, developmental disability, or other mental disability, 0 otherwise	.04	
Child-Communication ^c	1 if mother reports has at least one child in household with limited communication: difficulty seeing, hearing, speaking, 0 otherwise	.02	
Child-Mobility ^c	1 if mother reports cares for at least one child in household with limited	.02	

	mobility: uses cane, wheelchair; cannot get out of bed, climb stairs, or lift items without difficulty, 0 otherwise		
Child-Self-care ^c	1 if mother reports cares for at least one child in household with difficulty caring for self ,i.e., needs help with bathing, dressing, eating, and toileting, 0 otherwise	.008	
Child-Cognitive ^c	1 if mother reports cares for at least one child in household with limited cognitively: reports a learning disability or mental retardation, developmental disability, or other mental disability, 0 otherwise	.14	
Only child ^c	1 if only child has a disability, 0 otherwise	.10	
Only parent ^c	1 if only parent has a disability, 0 otherwise	.10	
Both child and parent	1 if both child and parent have a disability, 0 otherwise	.05	
Neither child nor parent	1 if neither child nor parent have a disability, 0 otherwise	.75	
Mother exited AFDC	1 if mother exited AFDC before the end of the panel, 0 otherwise	.316	
Duration on AFDC	Number of months on first observed spell of AFDC participation	6.31	11.6

N = 2,764

Source: Survey of Income and Program Participation (1996 panel). Notes: Unweighted statistics. ^aDescriptive statistics are for the sample of mothers who had at least 2 months of AFDC receipt. ^bAll definitions refer to the mother unless otherwise stated. ^cDisability variables collected at wave five of panel. Questionnaire items asked of adults and children then aggregated; ^dIn the multivariate analyses, we use the natural logs of income and AFDC income, but here and in Table 2 we provide the actual dollar amounts for descriptive purposes.

Table 2

Characteristics of Unmarried Mothers by AFDC Participation and Welfare Exits

	<u>Never Entered onto AFDC</u>	<u>Entered onto AFDC</u>	
		<u>Exited AFDC within 24 months of entering</u>	<u>Exited AFDC after 24 months of entering^a</u>
Age	36.9	31.8	32.5
Never married	.26	.52	.49
No. of children	1.61	2.13	2.26
Preschoolers only	.16	.26	.24
Income	\$2,771	\$1,304	\$1,020
Unemployment rate	5.4	5.39	5.79
AFDC	3.85	3.93	4.00
High school dropout	.127	.294	.391
High school	.346	.420	.371
Some college	.331	.229	.208
College plus	.142	.024	.016
Assoc. degree	.052	.031	.013
Duration on AFDC	n.a.	11.7	41.1
Emotional	.100	.219	.258
Communication	.037	.051	.099
Mobility	.073	.127	.221
Self-care	.011	.022	.043
Cognitive	.026	.086	.096
Child-Communication	.017	.019	.046
Child-Mobility	.015	.031	.039
Child-Self-care	.005	.012	.016
Child-Cognitive	.126	.178	.182
Neither child nor parent	.781	.674	.601
Only child	.103	.121	.096
Only parent	.081	.131	.195
Both child and parent	.035	.074	.099
N =	1,833 (.677)	571 (.211)	302 (.111)

Source: Survey of Income and Program Participation (1996 panel). Notes: ^aFifty-eight mothers never left the AFDC program by the end of the observation period, i.e., the mothers were right-censored; n.a. = not applicable.

Table 3. Proportional Hazard Model Predicting Risk of Unmarried Mother Leaving AFDC: Child and Mother Disability Status

	<u>Coefficients</u>	<u>Standard errors</u>	<u>Significance</u>
Logd	0.47	0.09	0.00
Age	-0.01	0.01	0.04
Non-Hispanic Black	-0.12	0.09	0.20
Hispanic	-0.23	0.11	0.04
Asian	0.29	0.30	0.34
Other	0.55	0.29	0.06
Never married	-0.12	0.08	0.16
High school	0.13	0.09	0.13
Some college	0.00	0.10	0.98
College plus	0.59	0.26	0.03
Assoc. degree	0.71	0.23	0.00
No. of children	-0.14	0.04	0.00
Preschoolers only	-0.14	0.12	0.23
Elementary school-age only	-0.13	0.11	0.27
Income	0.04	0.03	0.15
Emotional	0.11	0.10	0.28
Communication	-0.26	0.16	0.10
Mobility	-0.27	0.12	0.02
Self-care	-0.13	0.23	0.59
Cognitive	0.19	0.14	0.18
Child_Communication	-0.32	0.21	0.12
Child-Mobility	0.05	0.19	0.81
Child-Self-Care	0.18	0.30	0.55
Child-Cognitive	-0.06	0.08	0.43
South	-0.24	0.16	0.12
Northeast	-0.08	0.19	0.66
West	0.05	0.12	0.68
Unemployment rate	-0.20	0.05	0.00
AFDC	-0.46	0.17	0.01
Constant	-0.38	0.85	0.65

Log likelihood = -3335.18

Source: Survey of Income and Program Participation (1996 panel). Notes: Person-month file, N = 17,340; Discrete-time hazard model.

Table 4. Proportional Hazard Model Predicting Risk of Unmarried Mother Exiting the AFDC Program: Household Disability Configurations

	<u>Coefficients</u>	<u>Standard errors</u>	<u>Significance</u>
Logd	0.47	0.08	0.00
Age	-0.01	0.01	0.02
Non-Hispanic Black	-0.14	0.10	0.24
Hispanic	-0.22	0.12	0.08
Asian	0.25	0.33	0.45
Other	0.46	0.32	0.06
Never married	-0.12	0.09	0.11
High school	0.16	0.10	0.06
Some college	0.03	0.11	0.98
College plus	0.61	0.29	0.01
Assoc. degree	0.70	0.25	0.01
No. of children	-0.14	0.04	0.00
Preschoolers only	-0.15	0.13	0.15
Elementary school-age only	-0.14	0.12	0.17
Income	0.04	0.03	0.12
Only child	-0.21	0.11	0.07
Only parent	-0.25	0.11	0.02
Both child and parent	-0.24	0.15	0.08
South	-0.24	0.17	0.14
Northeast	-0.06	0.21	0.76
West	0.02	0.13	0.69
Unemployment rate	-0.19	0.06	0.00
AFDC	-0.45	0.19	0.01
Constant	-0.37	0.93	0.86

Log likelihood = -3339.45

Source: Survey of Income and Program Participation (1996 panel). Notes: Person-month file, N = 17,340; Discrete-time hazard model.