

Childcare Subsidies and the Transition from Welfare to Work*

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ABSTRACT

We address how childcare subsidies help in the welfare-to-work transition relative to other factors. We examine how the policy operates, whether childcare problems differ by subsidy receipt and the effect of subsidy on work. Data are from a random sample panel study of welfare recipients post-1996. Findings show that subsidy receipt reduces costs but not parenting stress or problems with care. It predicts earnings and work duration net of other factors. Increased use of subsidies by eligible families and greater funding for childcare would help meet the demand for this important support for working poor families.

KEY WORDS: childcare, subsidy, welfare, mothers' employment

Childcare Subsidies and the Transition from Welfare to Work

Access to subsidized child care is an important concern for many women moving from welfare to work. Because access to a subsidy program varies by state, we here describe the policy context in Michigan, where the study was conducted. We examine whether demographic characteristics and other factors that may affect work differ by childcare use and subsidy receipt. We assess whether subsidies reduce childcare problems and increase a woman's percent of months worked and monthly earnings. Using data from The Women's Employment Study (WES), a random sample panel survey of women who received welfare, we draw policy and program implications regarding how childcare financial assistance can better promote the welfare reform objective of self sufficiency through employment.

Background

Policies that help families find and pay for nonparental child care can facilitate the employment of women, especially single mothers. All else being equal, mothers facing lower childcare costs are more likely to be employed, particularly low-income or single mothers (Meyers, Han, Waldfogel, & Garfinkel, 2001). Low-income, single mothers also report being more likely to work when care is more available (Mason & Kuhlthau, 1992) and when they are more satisfied with the quality of care (Meyers, 1993). Problems with child care can lead single mothers to leave jobs and also can adversely affect attendance, work hours, and career advancement (Henly & Lyons, 2000). In theory, subsidies can reduce both childcare costs and childcare problems and thereby promote work. As such, subsidies are one policy strategy that can help address the childcare needs of low-income, working families.

In addition to childcare problems and childcare costs, many factors can affect the transition from welfare to work. Previous research has identified a wide range of factors that can potentially increase or hinder the success of low-income mothers in the labor force, including the women's physical or mental health status, their children's health, the women's human capital (her education and training), their personal and social or family problems, and access to transportation.

High rates of health and mental health problems among welfare recipients have been identified (Ensminger, 1995; Olson & Pavetti, 1996; Loprest & Acs, 1996; Danziger, Kalil, & Anderson, 2000; and Zedlewski & Alderson, 2001). Some studies found employment effects for low-income or welfare-recipient mothers who had one or more of these barriers, such as depression (Lennon, Blome, & English, 2001). Previous work with the Women's Employment Study found that child health problems, maternal health and mental health problems reduced work outcomes (Danziger, Corcoran, Danziger, Heflin, Kalil, Levine, Rosen, Seefeldt, Siefert, & Tolman, 2000). Analyses with these data also showed reduced work outcomes among women with less than a high school degree relative to women with more education and among those who lacked access to a car or driver's license (Danziger, Corcoran, Danziger, Heflin, Kalil, Levine, Rosen, Seefeldt, Siefert, & Tolman, 2000).

Findings on the work effects of social or familial factors are more mixed, such as the effects of domestic violence for welfare and work outcomes (Tolman & Raphael, 2000) and the effects of having social support (Newman, 1999; Henly, 2000). Domestic violence victims can have high rates of health and mental health problems that reduce work, but they also may be highly motivated to work as they seek financial independence from their abusive partners (Tolman & Rosen, 2001). In contrast, social support from relatives and

friends in poor families may be insufficient to result in increases in employment (Edin & Lein, 1997).

A sense of personal mastery, a measure of self efficacy which promotes coping (Pearlin, Lieberman, Menaghan, & Mullan, 1981), may be an important trait that is positively related to moving into work among welfare recipients. Controlling for the effects of social support and mastery may be important as personal and social resources that could help women succeed in the transition to work, whereas the effects and direction of domestic violence on work are less clear in the literature. Having personal, health, educational, transportation, and child health problems are likely to constrain work outcomes. Analyses aimed at addressing policy and program effects such as financial assistance for child care would be underspecified if these other conditions and characteristics of the woman and her family situation were not taken into consideration.

Childcare Assistance Policy and Welfare Reform

The federal government and states have greatly expanded spending on child care since The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) was enacted in August, 1996. The Act consolidated federal funding into a childcare and development block grant (CCDBG); 20 billion dollars were allocated for the period 1997 to 2002, reflecting a 25% increase (an additional four billion dollars) over the spending provided under prior legislation (U.S. House of Representatives, Committee on Ways and Means, 1998). States also were given the ability to increase spending further by shifting federal funds out of their Temporary Assistance to Needy Families (TANF) block grants. Additionally, states were given new flexibility in designing subsidy systems. Michigan blended its CCDBG and TANF funds to expend \$400 million in child care in FY 1999, up from \$128 million in FY 1996 (Seefeldt, Leos-Urbel, McMahon & Snyder, 2001).

Every state sets its own policies for childcare subsidies. Typically, states set eligibility criteria that include a family income cut-off, expressed as an amount in dollars or a percentage of the poverty line or of the state's median income. They also require that the parent be working or participating in education or training. The states provide subsidies to a subset of eligible families, depending on the availability of funds. Prior to 1996, welfare recipients or former welfare recipients had priority, but this is no longer required under the federal law (although it is still often the case in practice).

Work requirements in TANF are presumed to increase the need for child care. Although there were many individuals exempted from work requirements in the Aid to Families with Dependent Children (AFDC) program, nearly all TANF recipients must become engaged in work activities within 2 years of receiving assistance. By federal policy, states are allowed to exempt parents with children less than 12 months of age, and they are allowed to create other categories of exemptions.

Michigan is rather strict in its exemptions. It is one of 19 states that require work participation by the time a recipient's youngest child reaches 12 weeks of age. Thus, welfare mothers with very young children have to find child care to comply with work requirements. The only other reasons the state defers recipients from work participation are for disability or care giving to a disabled family member aged ≥ 65 , or adolescent parents attending secondary school.

Michigan subsidizes child care after families arrange it with state-contracted providers. Parents can choose a childcare center, family care home, group care home, relative or non-relative in-home childcare provider, provided they have appropriate licensure or registration and accept state TANF clients.

Types of Child Care

In 1998, there were approximately 4,600 licensed childcare centers in Michigan. Family and group child care both operate in private residences, but family childcare homes care for ≤ 6 children at any one time and need only register by attesting to meeting state regulations, providing personal references, and being cleared for criminal records, child protective services, and tuberculosis. In 1998, there were about 15,000 family childcare homes and 1700 group care homes in the state (Public Sector Consultants, 1998).

Group child care operated in homes provides care for 7-12 children at once and must meet licensing requirements, which include maintaining staff-child ratios (1:6) and age requirements for enrollment (no more than four children may be under 30 months and only two may be under 18 months). Like a family childcare home, the provider must also undergo registration screening procedures.

The other care option that can be subsidized is an in-home caregiver (e.g., babysitter, grandparent, friend, or neighbor). While not regulated by the state, the caregiver must enroll with the state welfare agency by providing documentation of willingness to provide care and permission for a background check. Once both caregiver and family make an agreement, the state may authorize childcare payments for up to 30 calendar days prior to application, if the caregiver is found eligible. The state is required to determine eligibility for the assistance of both the caregiver and the family within 45 days of receiving the application.

The majority of the subsidies in Michigan pay for in-home care. In-home care provided by a relative accounted for nearly half (46%) of the settings receiving subsidies in 1998. The next most common was center-based (18%) and in-home care by non-relatives

(16%). Another 11% of providers the state supported were family childcare homes and 9% were family group homes (Public Sector Consultants Incorporated, 1998).

Gaps in Subsidies

The Michigan Community Coordinated Child Care Association (4C) reported that in 1998 there were licensed slots to accommodate only 78% of all children in child care in Michigan (Public Sector Consultants, Inc., 1998). Not all providers in the state accept children whose families receive subsidies; others limit their enrollment when the state reimbursement rates are lower than their prices—only 47% of the centers, 54% of the family childcare homes, and 53% of group homes accept subsidies (U.S. Department of Health and Human Services, 1999). To increase the capacity and quality of care, the state awarded grants in FY 2001 to licensed or registered providers who served children from low-income or TANF families and awarded start-up grants to initiate new childcare centers, family homes and group homes (Michigan Family Independence Agency, 2001)

Over calendar years 1995-97, 375,000 Michigan children met the state's childcare subsidy income eligibility guidelines (U.S. Department of Health and Human Services, 1999). To be eligible, a family of three must receive TANF or have an income below \$26,064, or 59% of State Median Income. The number of children eligible would be much higher (545,000) if the state raised the income eligibility limits to 85% of the State Median Income, the maximum level allowed under federal law (U.S. Department of Health and Human Services, 1999). In an average month during 1998, 95,800 children (approximately 26% of the estimated eligible children) were subsidized.

Income eligible families must pay a portion of their childcare costs, from 5-70%, based upon the type of care selected, the area in which the care is used, and the age of the child. The percentage paid by the state is based upon the predetermined state maximum

rate or the provider's charge, whichever is less. The maximum rate is set at the 75th percentile of the local market rate for six regions in the state; however, even though a market survey of childcare costs was completed in 1999, the state's reimbursement rates for children over age 2.5 were based on the 1995-96 market rate (Seefeldt et al., 2001). For children under age 2.5, the 1999 market rate is used. If the cost of the child care is lower than the maximum rate, the rate of the child care is used. If the rate of the child care is higher than maximum rates, the agency maximum is used.

For the lowest-income families, the state will pay 95% of either the cost of care or the maximum. As a family's gross income rises, the subsidy falls; for example, a single mother with one child is no longer eligible if her gross monthly income exceeds \$1,758. Any childcare charge above the percentage allowed is the responsibility of the parent.

An example of the subsidy policy for respondents in the survey county is given in Table 1. If a family of three with a yearly income of \$15,000 does not use a childcare subsidy (although eligible), and enrolls an infant full-time in an average-priced center, they spend approximately \$559 per month. This amounts to spending about 45% of their monthly income on care. Likewise, if they enroll a preschool-aged child full-time in an average-priced center, they spend approximately \$516 on child care, or 41.3% of their income. These expenditures are slightly lower for family or group home care and considerably lower for in-home care (which does not vary by age of the child).

With subsidies, the percentage of monthly income spent on center-based infant care (the difference between the market price and the maximum state subsidy) drops to \$28, or only 2.2% of family income; for center-based care of a preschooler, it drops to \$76 per month, or 6.1% of the family income. Subsidies meet the average cost of in-home care fairly well, leaving little out of pocket expenditures, \$14 or .01%, for the family. Thus,

subsidies can reduce costs and may encourage parents to use particular types of care. Whether they help families with childcare problems and increase employment, especially net of other factors related to the welfare-to-work transition, has not been assessed. To fill this gap, we control for a wide range of problems that can impede low-income women's employment success and test for bias in the relationship between subsidy receipt and work.

Study Design and Measures

Data to assess the effects of subsidy receipt on childcare problems and employment came from the first three waves of the Women's Employment Study (WES), a multi-wave survey of welfare recipients in an urban Michigan county. A simple random sample was systematically selected from an ordered list of 8,875 eligible women who received welfare in the county in February 1997.

The original list sample included single mothers between the ages of 18 and 54 who were residents of the county, which is largely a medium-sized "rust belt" Midwestern city. Criteria for inclusion were limited to being White or Black, and U.S. citizens. (Non-citizens and other ethnic/racial groups comprised a very small proportion of the overall caseload and would be of insufficient number to allow examination of these groups in detail.)

In fall 1997, trained interviewers conducted in-home face-to-face interviews lasting about 1 hour with 753 women. The state's TANF agency provided names and addresses of all single-parent cases, and the women were sent letters asking them to participate in a study of how women combine work and family life. Respondents were re-interviewed in home in fall 1998 and fall 1999, for about 90 minutes. Information was collected on a broad and comprehensive set of indicators of economic and psychosocial well-being,

physical and mental health, demographic characteristics, income, current/most recent job, current welfare status, work and welfare histories, and child care.

The response rate for wave 1 was 86.2% (753 of 874), for wave 2 was 92% (693 of 753), and for wave 3 was 91% (632 of 693). Overall, the participation rate for all 3 waves was 72% (632 of 874). Comparisons of the interview sample and population on race, age, and welfare and administrative data showed no systematic bias. For the analysis reported here, the sample size was limited to those women in wave 3 who had at least one child < age 14 (561 of 632), because subsidies are limited in the state to children \leq age 13 or up to age 14 if the child is disabled. We also restricted the sample to families who were income-eligible for Michigan's subsidies (529 of 561). This resulted in a subsample of 83.7% of the total sample, but it represents all families in the sample for whom state-subsidized child care was relevant.

Comparisons of characteristics of the respondents in our subsidy-eligible group with the overall sample of current and former recipients showed that the subsidy-eligible sample ($n = 529$) was 56.7% African American, compared to 55.5% of the WES sample at wave 3 ($n = 632$). Of subsidy eligible, 68.2% had a high school diploma or equivalent (or more education), compared to 72.6% of the overall sample; 33.7% lived with a husband or partner, compared to 36.6% overall. Those who were subsidy-eligible had a mean age of 31.8 years, whereas the sample averaged age 30.0. Subsidy-eligible had on average 2.5 children, compared to 2.3 children for the sample. Thus, overall, the subset of families was fairly representative of the total sample.

Measures

The third wave of the survey asked many questions about child care to 59.7% of the respondents. These women had a child < age 14 in the household and had (a) used child care since wave 2 (on average 14 months before the wave 3 interview) and (b) indicated that the primary reason they needed care was to work, look for work, or go to school.

Respondents reported whether, in a typical week over the period since the last interview, any of their children had been cared for by (a) a daycare center, nursery, pre-school, or before- or after-school program, (b) Head Start, (c) the child's father, (d) a relative besides the child's father; or (e) a non-relative. For all types of care eligible for state subsidies (center or other program care, non-father relative care, and non-relative care), they were asked whether the state agency had helped to pay for that care. If a respondent reported that she had received state help paying for at least one of her care arrangements, she was coded as having received a subsidy. In this sample, center or other program care was the type most likely to be subsidized: 57.5% of those who had used centers reported state help to pay for it, whereas 49.8% of those who used relative care and 42.1% of those who used non-relative care reported that the state helped in paying for those arrangements.

In addition, the survey included questions about out-of-pocket childcare payments and problems with child care over the period since the last interview. Respondents reported how much they paid for care in a typical week over the time frame. Problems with child care were measured by whether respondents had experienced any work disruption due to a problem with child care since the last wave. Work disruptions included: ever had been unable to look for work or participate in training; ever turned

down a job offer; was ever late to or absent from work, school, or training; or had quit or been fired from a job due to child care. Respondents who answered positively to any one or more of these experiences were coded as having work disruption due to child care.

A second possible childcare problem was whether respondents had ever stopped using child care over the time frame, for any reason. A third problem that could be a reflection of childcare difficulties was a measure of parenting stress. *Parenting stress* included a 7-item index asking the degree of stress or irritation the mother perceives in relation to her interactions with her child. Thus, it explores mothers' subjective sense of difficulty with regard to their parenting role and, in previous research, has been related to child maltreatment (Abidin, 1990). Items for this scale were taken from Abidin's Parenting Stress Index (PSI; Abidin, 1990) and adapted as in the New Chance Study (Zaslow & Eldred, 1998). A sample item was "I find that being a mother is much more work than pleasure." Items are measured on a 5-point scale and responses range from never (1) to almost always (5). A composite score is calculated, and higher scores indicate greater parenting stress. The Cronbach's α for the WES respondents in these analyses was .75.

Family income

Family income was calculated to determine whether the respondent was eligible for the childcare subsidy. It is the sum of the amount of income from all sources reported in the month before the wave 3 interview. Included were reports of income from the respondent or other members of her "legal family" (i.e., the respondent, her spouse if married, and her caregiver children) from earnings, TANF, food stamps, child support, SSI and Social Security, unemployment insurance, money from family and friends, and any other source not specifically mentioned. Respondents reported income that accrued to any

household member, not just to legal family members, some of which would not be included in the state's calculations of subsidy eligibility. Thus, we imputed the amount of income received by the legal family itself. This included imputing a respondent's own earnings and all TANF, food stamps, and child support as belonging to the family unit. SSI or Social Security was counted as belonging to the family unit only if the respondent reported that she or her child received it; otherwise, we included that income only if she was married. Similarly, unemployment insurance and other household members' earnings were imputed only if the respondent was married. Family income in conjunction with the state's income eligibility guidelines, which are based on family size and income, was estimated to compute whether the respondent was income-eligible for at least some childcare subsidization.

Using regression analyses, we examined two work-related outcomes that could be affected by the availability and affordability of child care. First, the proportion of calendar months between the interviews in which the respondent reported that she had worked for pay (the total number of months between waves ranges from 8 to 19, but averages about 14) was estimated in a Tobit regression. The natural logarithm (\ln) of respondents' earnings in the month before the interview was the second dependent variable in an Ordinary Least Squares (OLS) regression.

In the regression analyses, we controlled for several other factors identified in previous studies as relevant for low-income mothers' employment: demographic differences, social support, and a sense of mastery. The models also included potential barriers to work: whether the respondent reported a physical health problem, a mental health problem, a child health problem, or recent experience of domestic violence at wave

3; whether the respondent had a human capital barrier (e.g., lacks education); and whether the respondent lacked a driver's license or access to a car.

Specifically, we included race and mother's age. Also, marital status was coded to compare single mothers with those who had married or cohabited with a partner. The number of children ages 0-2, 3-5, and 6-10, age categories that typically require demanding but different levels of parental monitoring and supervision, were measured.

A respondent was coded as having a physical health problem if she both described her general health as *fair* or *poor* and scored in the bottom quartile of a physical functioning scale derived from the SF-36 Health Survey (Ware, Snow, & Kosinski, 1993). A respondent was coded as having a mental health problem if she met the DSM-III-R diagnostic screening criteria for major depression, social phobia, generalized anxiety disorder, post-traumatic stress disorder, alcohol dependence, or drug dependence, as measured by the CIDI-SF (Kessler, McGonagle, Zhao, Nelson, Hughes, Eshleman, Wittchen, & Kendler, 1994). She was coded as having a child health problem if at least one child for whom she is the primary caregiver had *a physical, learning, or emotional problem that limited his or her activity*, a question used in national studies such as the National Longitudinal Survey of Youth (NLSY). She was coded as having a transportation problem if she *lacked a driver's license or access to a car*.

Domestic violence was assessed with a modified version of the Conflict Tactics Scale (CTS) (Straus, 1979). Consistent with previous studies, a 6-item severe physical violence score was constructed as a dummy variable. Respondents were coded as 1 if in the last 12 months the woman had experienced any 1 of 6 types of partner violence: *been hit with a fist or object; been beaten, choked, or threatened with a weapon; or been forced into sexual activity* (Tolman & Rosen, 2001).

Human capital measures included whether the woman lacked a high school diploma or equivalent and whether she *read below a 5th-grade level*. Reading ability was assessed using the Wide Range of Achievement Test 3 (WRAT3); this test of an individual's ability to learn reading and spelling is correlated with results of the California Achievement Test and the SAT (Wilkinson, 1993).

Social support was measured with seven items that indicate perceived availability of support, part of the Social Relationship Scale (O'Brien, Wortman, Kessler & Joseph, 1993). Such measures have been used in studies to assess whether having support mediates the effects of stress on health and mental health. The items tap a respondent's hypothetical access to people who can help with personal problems, medical emergencies, advice, information, small loans of money, and so forth, all of which can affect a person's contacts in employment networks and her ability to respond to the crises and burdens of home-work conflicts (Henly, 2000). Scores range from 1-5 on each item with responses ranging from *would definitely not* to *yes definitely* to indicate whether she would have someone to turn to for help. Scores were standardized to range between 0 and 1, and the Cronbach's α was .88.

Mastery was assessed with the Pearlin Mastery Scale (Pearlin et al., 1981), a 7-item scale of the extent to which the respondents feel efficacious and in control of life. Representative items from the mastery scale include "I can do anything I set my mind to" and "What happens in the future depends on me." Items were scored on a 4-point scale where 1 indicates *strongly disagree* and 4 indicates *strongly agree*. The theoretical range of the scale is 7 to 28, and higher scores indicate greater mastery (Cronbach's α = .81). Mastery scores were standardized to range between 0 and 1.

RESULTS

We first address the question of whether, among respondents who are eligible to receive the subsidy (by age of children and income level) and who had used child care, the costs or problems of child care differed by subsidy receipt. Only 30.9% ($n = 68$) of those with a subsidy reported out-of-pocket costs in a typical week, whereas 42.7% ($n = 67$) of families who used care but did not get a subsidy had out of pocket costs, $\chi^2 (df = 1, n = 377) = 5.52, p = .019$). However, among those who had out-of-pocket costs, the dollars paid for child care and the percentage of family income that went to child care did not differ significantly by subsidy receipt. Specifically, those without subsidies who had costs paid on average \$68.76 per week, or 39.6% of family income. Similarly, the one-third of those who received subsidies and had costs paid \$60.47 per week on average, or 31.1% of family income.

Of the several potential care-related problems measured, only one differed by subsidy receipt: 20.5% ($n = 45$) of subsidy users had stopped using childcare in the last year, compared to 35.8% ($n = 56$) of those without a subsidy, $\chi^2 (df = 1, n = 377) = 10.81, p = .001$. Work disruptions of several kinds that were due to a childcare problem did not differ across the two groups. These included whether in the last year the respondent was ever fired or quit a job or training program, was unable to accept a job or training program, was unable to look for a job or training, or was late or absent from a job or training program because of child care. Approximately one-third of each group reported at least one of these problems occurred because of childcare. Parenting stress scores did not statistically differ across the two groups -- the mean for those with and without subsidies was 22. Thus, the lack of difference on these measures suggests that care-related problems persisted regardless of subsidy receipt. We cannot assess whether the subsidy was

insufficient to secure more stable care, or whether, when child care was disrupted, it was difficult to maintain the subsidy.

Table 2 reports descriptive information for our sample of low-income families with children < age 14 on demographics, control measures, and work outcomes by subsidy receipt and use of child care. The columns compare respondents who had not used child care since the last interview with those who used care but did not receive a subsidy and those who used subsidized care. Just 41.6% reported having received a subsidy for at least one type of care since the last interview (n = 220), whereas 29.7% (n = 157) reported having relied on unsubsidized care. The other 28.7% (n = 152) did not use care in this period.

Those who had not used care had a racial composition of 55.9% African American -- highly similar to that of the WES sample in general (55.5 % African American). However, among those who used care, those who received a subsidy were more often African American (66.4%), whereas those who had not were more likely to be White (66%). Among all care users, African Americans had a significantly lower average income-to-needs ratio than Whites (0.87 versus 1.09, not shown in table); thus, on average, African Americans may have been more motivated by financial strain to navigate the system to secure a subsidy.

Those who received a subsidy were less often married or cohabiting with a partner and had the highest average number of children and of preschoolers relative to the other groups. Not having a spouse or partner and having more children may have made them more likely to need childcare to go to work and less likely to have access to (free) parental care. Thus, these characteristics raised the demand for subsidies.

Those who did not use care were older and had significantly fewer young children than women in the other groups. They had lower average levels of social support and sense of mastery. They more often faced barriers to work, including lack of a high school diploma, lack of car or drivers' license, reported high number of physical health problems, responsibility for a child with a health problem, and a low reading level.

This profile suggests three plausible explanations for the non-use of child care among low-income families with young children. The fact that many of these respondents were older, and that fewer of them had a preschooler, suggests that some of them may not have needed child care to work. On the other hand, the fact that they had higher rates of barriers to work suggests that some may not have used care because they could not go to work even if they were to find care. Alternatively, it may be that these barriers prevented them from successfully securing care or from successfully navigating the subsidy system to acquire the financial means to secure care. This hypothesis is tested in the regression analysis.

Those who had not used care had the poorest work outcomes. On average, they worked in only 40.4% of the months since the fall 1998 interview, and just 41.5% of them worked in the month prior to the fall 1999 interview. Among those who used care, those who received a subsidy worked in more of the months since the previous wave than those who relied on unsubsidized care (85.1% versus 74.6%). For mean monthly earnings (among earners), the pattern of best outcomes for the subsidized (\$966) and worst outcomes for those who did not use care (\$833) persisted, but the differences were not significant.

Single-Stage Regression Results

All regressions examined the predictive role of the childcare subsidy for work outcomes. Use of child care and use of a subsidy may be jointly determined—that is, one may find care and seek out a subsidy to pay for it, or one may learn of the availability of subsidies and, therefore, seek out care. Thus, these regressions include all respondents who made up the “eligible population” (were income eligible and had an age-eligible child) rather than only those who used care or only those who used a subsidy-eligible type of care. We then contrasted those who received a subsidy with all others, both those who used unsubsidized care and those who did not use care at all. The coefficients on subsidy use represent the effect of the joint decision to use both subsidy-eligible care and a subsidy relative to any other possible care decision.

The results of the first regression, presented in the first column of Table 3, have the natural logarithm (\ln) of earnings in the month prior to the interview as the dependent variable. If a respondent had no earnings, she is recoded as having \$15 in earnings (the lowest amount earned by a respondent with non-zero earnings) in order to create a valid logarithm. We use the logarithmic transformation, because earnings are known to be skewed and are better approximated by a lognormal distribution. The logarithm transforms income into an approximately linear variable with a lower bound of 2.7, $\ln(15)$, for which we use a Tobit regression.

The results of the second regression presented in Table 3 have the proportion of months worked between waves as the dependent variable (a continuous outcome with values ranging only between 0 and 1). This required a linear transformation on the proportion of months worked, P , and used as the dependent variable the natural logarithm of P divided by the quantity $1-P$. We performed an ordinary least squares (OLS)

regression on this linear and unbounded variable, an econometric procedure known as a grouped logit regression.

In addition, we controlled for demographic differences and advantages and barriers to work in these analyses. Demographic characteristics including age, race, and number of children aged 3-5 and 6-10 were not significant in predicting work outcomes after we controlled for subsidy receipt and advantages and barriers to work. Among these respondents, the number of children aged ≤ 2 was significant in predicting earnings when controlling for subsidy status as well as other explanatory characteristics. All else being equal, a woman with an additional child under 2 earned 43% less in the month before the interview.

On the other hand, a greater sense of mastery significantly predicted both higher earnings and a higher percent of months worked. Lack of transportation and physical health problems also remained significant when controlling for child care subsidy. Mental health, domestic violence, education, and child health problems were not significant in these analyses of work outcomes.

Taken together, these results show that receipt of a childcare subsidy predicts better work outcomes. Among otherwise similar respondents with a child under age 14, those who had a state childcare subsidy at some point between waves 2 and 3 had on average worked in more months during the past year and also earned more at wave 3. The size of the effect of the subsidy depends on the proportion of months that a woman was predicted to work if she did not receive a subsidy, $P^*(1-P)$. We calculated that on average, a childcare subsidy increased the total proportion of months that a respondent worked by 8 points. But, for a respondent who, without a subsidy, worked in half the months between interviews, a subsidy is predicted to increase work participation to over three-quarters of

months. In addition, having a subsidy increased respondents' monthly earnings by 105% (? coefficient in Table 3).

Two-Stage Regression Results

Although the above findings are quite strong, they are clouded by concerns about the direction of the relationship, or possible endogeneity, between work and subsidy receipt. It could be that the characteristics, both measured and unmeasured, that make a woman more likely to navigate the state system successfully and secure a subsidy are the same characteristics that make a woman more likely to be successful in work. To the extent that relevant characteristics are unmeasured, a woman's receipt or non-receipt of a subsidy will be correlated with the error term that is left after controlling for measured characteristics in predicting work outcomes. This will result in biased coefficients and could lead to exaggerated estimates of the influence of subsidies on work.

In an ideal research arrangement, one would use a randomized experiment to resolve this problem. If subsidy receipt were randomly assigned, it would not be correlated with unmeasured characteristics of the respondent, and one could be confident that the estimate of the effect of subsidy receipt on work was unbiased. Subsidies are not randomly distributed to the population, so we do not have access to such an arrangement. However, the instrumental variable regression technique is an econometric method that allows researchers to approximate a randomized experiment (Greene, 2000).

The treatment effects regression is a two-stage model. In the first stage, it uses relevant characteristics to generate a prediction of subsidy receipt. In the second stage, it uses the expected value of subsidy receipt, rather than actual receipt/non-receipt, to estimate the effect of subsidy receipt on work. The predicted value will be uncorrelated with the error term in the second equation (and will produce an unbiased estimate) only

when one of the variables used to create the predicted value is exogenous, or unlikely to cause the outcome of interest. This variable thus acts as an instrument, in effect, like partial random assignment. That is, it must be a factor that affects subsidy receipt but that does not plausibly affect work outcomes directly. Moreover, it must not be self-selected by the respondent in a way that suggests it could be driven by respondent characteristics that also affect work.

In this study, the welfare district office to which a respondent was assigned served as an instrument because of how the welfare, work, and childcare subsidy policies were implemented. In the sample county, the welfare population is concentrated near the city center and is divided into quadrants. The district offices for the quadrants are located near each other within downtown, and, because of the geographic concentration, travel time from the sectors to the district offices does not differ by quadrant. Applicants for welfare and childcare subsidies were assigned to district office by zip code, and these assignments shifted according to application rates from one office to another.

Employment search services programs, to which recipients were sent to carry out work requirements, were administered outside of the district offices. These employment service agencies also were centrally located, and all served the same general local labor market of the county. In addition, the referral of cases from district offices to these employment service agencies shifted over time. Because employment assistance was handled by different organizations than those that processed childcare assistance, work outcomes should not depend in any direct way on the district office that processed the childcare assistance. In fact, when district office administrative data were examined, we found that, controlling for respondent characteristics, one welfare office had a higher rate of subsidy assignment than that of the other three offices. Given recent literature on

differences in subsidy administration between locations (Adams & Rohacek, 2002), such variation is not specific to Michigan, but rather common across states. It was fortuitous for the purpose of this analysis, because the welfare district office could be treated as an exogenous factor that affects subsidy receipt but is unlikely to directly affect work outcomes.

Table 4 presents the results of the two-stage analyses of earnings and percent of months worked. In general, the estimates do not look much different with this added layer of statistical precision. The coefficients on expected subsidy in the second stage, although larger than the coefficients on subsidy in the single-stage equations (Table 3), are not significantly different when the standard errors are taken into account. Moreover, the likelihood ratio test of the first and second stages does not reject independence, suggesting that the instrument approach is unnecessary. Thus, the cross-sectional relationship of recent subsidy use and work shown in Table 3 is representative of the true relationship. This suggests that the treatment effect of a policy change that exclusively increased overall subsidy use (but did not target directly employment of the parents) would be at least as large as the coefficient of subsidy receipt on work would suggest—more than doubling earnings and substantially increasing months worked.

Discussion

Forty-two percent of respondents who were income eligible and had a child under age 14 reported receiving a childcare subsidy for care used during a typical week over the 14-month survey period. Nearly a third of these families also reported out-of-pocket expenses for care during a typical week. These costs (about \$60 per week) reflected on average 31% of the family income. Yet, subsidy users were no less likely to report parenting stress and experienced no fewer work-related childcare problems (compared to

respondents without this assistance). However, they were less likely to have stopped using care and had worked in a higher proportion of months.

Public expenditures on child care and use of subsidies have grown across the nation since the policy changes of 1996. However, demand for care also has increased with increases in maternal employment. Mezey et al.(2002) reported that the 1.8 million children receiving subsidies represented only 12 to 18 percent of income-eligible children whose parents worked or were in training for work. Michigan's estimates of percentage served were higher (26%), and the number served in the study sample was even higher (42%). However, subsidy receipt is defined in this study as a "yes" rather than "no" to having received state financial help during a typical period of childcare use within a 14-month period, which may result in higher estimates of subsidy receipt than would other measures. One five-state study found that the average length of time of subsidy receipt was 3-7 months (Adams & Rohacek, 2002).

Despite this limitation in the measure of subsidy, the relationships between subsidy receipt and employment held in our multivariate models, suggesting that all else being equal, subsidies have a strong impact on work outcomes. Few other studies have examined the role of subsidies in the transition from welfare to work, but a previous study showed results consistent with our findings. Meyers, Heintze and Wolf (2002) found strong subsidy effects on work among a sample of California welfare recipients prior to 1996. Subsidy receipt was quite low in their study and few other barriers to work were included as control measures.

In our study, we can rule out that having a subsidy is merely a proxy for other factors (e.g., number of children, good mental health, or access to transportation). Rather, controlling for demographics and other factors shown generally to affect the work

outcomes of women who have been on welfare, subsidy receipt is a significant predictor of earnings and employment duration. These findings suggest that the lack of a childcare subsidy is a significant barrier to work for the population of mothers in the present study. The same can be said for lack of transportation and physical health problems, and for some outcomes, age of mother and number of young children.

Finally, when effects of childcare subsidies on work are examined, some factors previously identified as barriers to work were not significant, such as mother's mental health, her education, and child's health (Danziger et al., 2000). These barriers may nonetheless be important for women who do not have children of childcare age. Further, of the two advantages for work controlled for in this study, a higher mastery score remained significant for a mother's employment duration and earnings. Future studies should include controls for both barriers and resources in women's lives that can affect the transition from welfare to work.

Policy and Program Implications

The childcare subsidy is an important component of welfare reform, despite the fact that rates of receipt of subsidies among those eligible for them (take-up rates) are low across the nation (Meyers et al, 2001). In our sample of current and former welfare recipients, the majority of families eligible for the subsidy did not receive one, and many subsidized respondents reported continuing and high expenses for child care. Further, receiving a subsidy did not significantly reduce the frequency of work-related childcare problems. These findings suggest that current reimbursement rates, set below market rates for care, do not fully remove the burden on low-income families and may affect the choices of care they make. Subsidies in Michigan are predominantly used for in-home care that is less regulated than other types of childcare services. Advocates and childcare

policy analysts should monitor these trends in how many eligible families receive subsidies, how much of the cost of child care is allayed by these subsidies, and, beyond the scope of the present study, the quality of care in subsidized services. They should try to assess reasons for low take-up rates in their communities and seek policy solutions to increase access to these benefit programs. For example, the complexity of the application process may contribute to low take-up rates, as could lack of awareness of the subsidy, knowledge of one's eligibility status, or inadequate outreach by service providers (Adams & Rohacek, 2002). However, some income-eligible families may indeed be able to find and prefer unpaid care and, therefore, will not apply for financial assistance.

The rates of low take-up among eligible families and high reported childcare costs, combined with the positive effects of subsidies on employment success, suggest that outreach efforts must be targeted broadly to families inside and outside of welfare systems. It may be that those who leave welfare for work jeopardize their access to childcare subsidies in addition to losing access to other supports for which they may still be eligible, such as Medicaid and food stamps.

If childcare funding does not increase, and if simplified procedures do not allow more of those who qualify to obtain subsidies, demand for assistance for child care will continue to outstrip supply. Although helpful for families, these policies will continue to constrain the childcare and employment choices of low-income parents. The political prospects of expansions in childcare support are not promising; instead cuts in such benefits are more likely in the current political climate (Parrott & Mezey, 2003). Recent debates and proposals for welfare reform reauthorization in Congress explicitly maintained budget-neutrality, despite calls in the Senate to increase childcare funding. Further, many states are now facing large budget shortfalls that may bring about cuts in programs for low

income families. For example, a recent news story in Michigan (*Detroit News*, July 18, 2003) reported that the state budget to take effect in October 2003 calls for restricting eligibility for childcare subsidies to families at 150% of the poverty line or below instead of at or below 200% of poverty. More than 3,000 families could lose this critical source of support. Budget savings in child care could result in added state welfare costs, if some parents who cannot manage work and pay their childcare bills end up returning to welfare.

Table 1. Childcare Prices and Co-payments for Hypothetical Sample Family of Three Earning \$15,000 with One Child in Full-Time Care

Child/Care	Without Subsidy		Maximum Subsidy Rate	With Subsidy	
	Average Monthly Prices For Full-time Care in Sample County	% of Income		Average Monthly Difference Between Price and Subsidy	% of Income
Infant (age 1)					
Center-based	\$559	45	\$531	\$28	2.2
Family or group childcare home	\$537	43	\$510	\$27	2.2
In-home care	\$282	23	\$268	\$14	.01
Preschooler (age 4)					
Center-based	\$516	41	\$440	\$76	6.1
Family or group care home	\$494	40	\$399	\$95	7.6
In-home care	\$282	23	\$268	\$14	.01

Source: Local market estimates provided by the local Michigan Community Coordinated Child Care Association.

Table 2. Sample Characteristics by Use of Care and Subsidy Receipt

	Have not used care	Have used care, but no subsidy	Have used care with a subsidy
Among income-eligible respondents with a child under 14 (N=529):	28.7%, n=152	29.7%, n=157	41.6%, n=220
<u>Demographics</u>			
% African-American ^{a,b,c}	55.9%	44.0%	66.4%
Mean age ^{a,b}	34.9 (7.69)	29.9 (6.35)	29.3 (5.86)
% Married or cohabiting ^{b,c}	39.5%	45.2%	21.4%
Number of care-given children aged 0-2 ^b	0.2 (0.51)	0.3 (0.50)	0.4 (0.63)
Number of care-given children aged 3-5 ^{a,b}	0.4 (0.65)	0.6 (0.66)	0.7 (0.71)
Number of care-given children aged 6-10 ^b	0.9 (0.89)	0.9 (0.86)	1.0 (0.90)
<u>Advantages for work</u>			
Social Support (1=lowest to 5=highest) ^a	4.2 (0.86)	4.4 (0.70)	4.3 (0.86)
Sense of Mastery (1=lowest to 4=highest) ^{a,b}	3.0 (0.48)	3.2 (0.46)	3.2 (0.47)
<u>Barriers to work</u>			
% Experiencing domestic violence	10.5%	14.1%	11.8%
% With no high school diploma ^{a,b}	42.1%	30.6%	25.5%
% With no car or license ^b	37.5%	27.4%	27.2%
% With a physical health problem ^{a,b}	35.5%	18.7%	11.9%
% With a mental health problem	39.5%	34.6%	31.4%
% Caring for a child with a health problem ^b	20.4%	15.3%	12.3%
% Reading below 5th grade level ^{a,b}	27.0%	14.0%	18.2%
<u>Work outcomes</u>			
Mean % of months worked between Fall 1998 and Fall 1999 ^{a,b,c}	40.4% (0.42)	74.6% (0.29)	85.1% (0.25)
% of respondents with earnings in month prior to Fall 1999 interview ^{a,b}	41.5%	79.6%	86.8%
Mean earnings in month prior to Fall 1999 interview (nonzeroes)	\$833 (682.16)	\$884 (551.17)	\$966 (580.85)
^a Those who have not used child care differ from those who have used care but without subsidy at p<.05			
^b Those who have not used child care differ from those with a subsidy at p<.05			
^c Those who have used care but without a subsidy differ from those with a subsidy at p<.05			
Standard deviations in parentheses			

Table 3. Single-Stage Regressions Predicting Work Outcomes Among Income-Eligible Respondents With a Child Under 14

	Natural log (last month's earnings)		Natural log (% of months worked since W2) / (1-% of months worked since W2)	
	Tobit		OLS	
	B	Std. Error	B	Std. Error
Receiving childcare subsidy	1.047***	0.221	1.058***	0.170
<u>Demographic controls</u>				
Age	-0.022	0.017	-0.0457***	0.013
Race (1 if African-American, 0 if white)	0.007	0.217	0.040	0.166
Married/cohabitating	-0.213	0.232	0.161	0.177
Number of care-given children aged 0-2	-0.434*	0.193	-0.226	0.147
Number of care-given children aged 3-5	-0.132	0.160	-0.085	0.121
Number of care-given children aged 6-10	0.015	0.119	-0.172	0.091
<u>Advantages for work</u>				
Social Support (1=lowest to 5=highest)	-0.001	0.139	0.014	0.104
Sense of Mastery (1=lowest to 4=highest)	0.827***	0.235	0.443*	0.179
<u>Barriers to work</u>				
Domestic violence	0.146	0.319	0.050	0.241
No high school diploma	-0.433	0.233	-0.285	0.177
Lack of car or license	-0.818***	0.232	-0.366*	0.176
Physical health problem	-1.421***	0.283	-0.633**	0.208
Mental health problem	-0.202	0.223	-0.104	0.170
Child health problem	-0.359	0.292	0.167	0.219
Reads below 5 th grade level	-0.399	0.269	-0.097	0.203
Constant	3.884***	1.139	-1.839*	0.866
N	521 ^a		521 ^a	
R-squared			0.216	
Pseudo R-squared for Tobit regression	0.251			

^a8 respondents with missing data are excluded from the analysis

*p<.05. **p<.01. ***p<.001.

Table 4. Two-Stage Treatment Effect Regressions Predicting Work Outcomes Among Income -Eligible Respondents With a Child Under 14

	Stage 1 Treatment selection equation: Subsidy receipt		Stage 2 Main equation: ln (last month's earnings)		Stage 1 Treatment selection equation: Subsidy receipt		Stage 2 Main equation: ln (% of months worked since W2) / (1-% of months worked since W2)	
	B	Std. Error	B	Std. Error	B	Std. Error	B	Std. Error
Receiving childcare subsidy	--	--	2.500***	0.708	--	--	1.828***	0.600
Instrument: District office 2	0.252*	0.125	--	--	0.263	0.136	--	--
<u>Demographic controls</u>								
Age	-0.028**	0.010	0.002	0.015	-0.030*	0.010	-0.039**	0.014
Race (1 if African-American, 0 if white)	0.239	0.129	-0.093	0.179	0.239	0.130	-0.015	0.172
Married/cohabitating	-0.804***	0.138	0.303	0.258	-0.807***	0.139	0.365	0.234
Number of care-given children aged 0-2	0.320**	0.115	-0.468**	0.166	0.296**	0.114	-0.300	0.157
Number of care-given children aged 3-5	0.290**	0.092	-0.283*	0.143	0.284**	0.094	-0.161	0.134
Number of care-given children aged 6-10	0.233**	0.072	-0.121	0.110	0.244**	0.072	-0.234*	0.103
<u>Advantages for work</u>								
Social support	-0.019	0.079	0.042	0.109	-0.046	0.081	0.029	0.105
Sense of mastery	0.089	0.140	0.520**	0.187	0.099	0.141	0.414*	0.181
<u>Barriers to work</u>								
Domestic violence	-0.018	0.186	0.116	0.251	-0.053	0.188	0.060	0.242
No high school diploma	-0.426**	0.138	-0.063	0.209	-0.426**	0.140	-0.171	0.196
Lack of car or license	-0.069	0.137	-0.544**	0.183	-0.083	0.138	-0.347	0.177
Physical health problem	-0.411*	0.164	-0.731**	0.232	-0.403*	0.167	-0.537*	0.221
Mental health problem	0.041	0.133	-0.201	0.177	0.040	0.134	-0.118	0.171
Child health problem	-0.213	0.172	-0.117	0.233	-0.204	0.175	0.223	0.224
Reads below 5th grade level	-0.126	0.158	-0.208	0.213	-0.156	0.160	-0.063	0.205
Constant	0.422	0.654	3.396	1.005	0.510	0.666	-2.345*	0.947
Wald chi-square(16)	135.97***				108.45***			
Likelihood ratio test of independent equations chi-square(1)	2.53				0.65			
N=521 ^a								
^a 8 respondents with missing data are excluded from the analysis								
*p<.05. **p<.01. ***p<.001.								

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