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UNIVERSITY OF WISCONSIN–MADISON

Exploring the Long-Term Effects of Child Support

Jooyoung Kong,[1] Maria Cancian,[2] Daniel R. Meyer,[1] and Quentin Riser[1]
[1]Institute for Research on Poverty and Sandra Rosenbaum School of Social Work
[2]Institute for Research on Poverty and Georgetown University

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Since the establishment of the Child Support Enforcement Program in 1975, child support policy has played a central role in improving the economic circumstances of children living apart from one of their parents (Cancian & Meyer, 2018; Pirog & Ziol-Guest, 2006). Child support is a monetary transfer from noncustodial parents (i.e., parents who do not live with their child) to a custodial-parent family (i.e., a family in which at least one child lives with only one biological parent). Child support becomes relevant when parents with minor children divorce or separate or when a child is born to unmarried parents who do not co-reside. Child support policy aims to ensure that noncustodial parents, typically fathers, pay an appropriate amount of financial support to custodial-parent families, typically mothers. The policy is especially important because custodial-parent families face a higher risk of poverty than two-parent families: in 2017, 30 percent of children living with one parent were below the poverty line, compared to 11 percent of children living with both parents (Grall, 2020).

The policy's positive effects have been well-documented, including reducing child poverty rates, better educational and behavioral outcomes for children, and benefits in child food security, health, and housing stability (e.g., Baughman, 2017; Greene & Moore, 2000; Hakovirta et al., 2020; Lewis & Kornich, 2020; Nepomnyaschy et al., 2012; Nepomnyaschy et al., 2014). However, little work has examined the long-term effects that child support receipt has on children, especially in terms of economic outcomes in their adulthood. Addressing this can add substantial new knowledge on the impact of child support. Specifically, this inquiry may provide evidence on the role of child support in mitigating the persistent effect of financial disadvantage related to being raised in a single-parent family.

The primary aim of the current paper is to examine the impact of receiving support[1] as a child on economic outcomes in adulthood. This is one of the first studies to investigate the policy's long-term economic effects on children. To ensure the rigor of the analysis, the current project took a two-study approach, using different analytic approaches, and analyzing two related but different data sources with complementary strengths: the Wisconsin Child Support Demonstration Evaluation (CSDE) and the Wisconsin Court Record Data (WCRD).

THEORETICAL FRAMEWORK AND THE REVIEW OF RELATED LITERATURE

Intergenerational Transmission of Economic Status

The intergenerational transmission of economic status serves as a conceptual framework explaining the long-term effects of receiving support as a child on economic well-being in adulthood. The literature on the intergenerational transmission of economic status indicates that children's economic futures are substantially affected by family background, specifically parental economic status (Bird, 2007; Guner, 2015; Black & Devereux, 2011). Becker and Tomes (1979; 1986) made seminal contributions in laying out a theoretical foundation for the existence of an economic association across generations (Guner, 2015). The core of the Becker and Tomes model is that parents spend their income on human capital investment in children and transfer the endowments of earning capacity (e.g., genetic heritage, family culture, connections) to their children, which can influence children's future human capital production, such as earnings (Guner, 2015; Lee & Seshadri, 2019; Solon, 2004).

[1]For simplicity, we use the term "those receiving child support" rather than "those on whose behalf child support was paid." For some families, the amount paid is not fully received; for custodial-parent families receiving Temporary Assistance to Needy Families, a portion or all of the amount paid is retained by the government. Since 1996, states set the proportion that is retained versus "passed-through" to families.

There is a great deal of empirical evidence supporting intergenerational persistence in economic status (Black & Devereux, 2011). For example, Lee and Seshadri (2019) revealed that parental background when children grew up was a strong predictor of children's lifetime earnings, explaining about a quarter of children's life-cycle earnings variance later in adulthood. Similarly, Chetty and colleagues (2014) analyzed U.S. federal income tax records from 1996 through 2012 and showed evidence of a substantial association in economic resources between generations: the association between mean child ranks and parent ranks in their income distributions was substantially linear, showing that a 10-percentile point increase in parent rank was associated with a 3.41 percentile increase in a child's income rank, on average.

Building upon this, scholars have postulated that there is an intergenerational component of poverty that refers to the process by which poor parents transmit poverty and related disadvantage to their children (Harper et al., 2003; Van Ryzin et al., 2018; Blanden et al., 2014). Longitudinal data show that those who were poor during childhood were more likely to be poor in early and middle adulthood than those who were never poor, and this was especially true for African Americans (Wagmiller Jr. & Adelman, 2009). It was also estimated that a child who spent half or more of their childhood in poverty had a 46% chance of living in poverty at age 20 and a 45% chance of living in poverty at age 35 (Fass et al., 2009). Scholars also noted that this persistent pattern across generations has become more entrenched in recent years (Carr & Wiemers, 2016; Aaronson & Mazumder, 2008).

As suggested by the Becker and Tomes model, intergenerational poverty may occur due to the lack of human capital investment in children. Alternatively, disadvantages accumulated during childhood and adolescence, such as worse physical and mental health or cognitive and neurophysiological problems associated with family poverty may negatively impact economic

well-being in adulthood (Berger, 2015; Harper et al., 2003; Van Ryzin et al., 2018). Subsequent life adversities and stressors, such as marital dissolution and unemployment, may also link childhood and adulthood poverty (Najman et al., 2018). Racism and other forms of discrimination may also account for persistent disadvantage and intergenerational poverty for minoritized groups (Chetty et al., 2020).

Childhood Family Structure and the Intergenerational Transmission of Economic Status

Prior research also noted that childhood family structure may explain the underpinning of intergenerational transmission of economic status (Bird, 2007; Cancian & Reed, 2009; Lopoo & DeLeire, 2014; Tach, 2015). In other words, growing up in a single-parent family or experiencing changes in living arrangements due to parents' partnership dissolution may diminish children's future economic outcomes. Studies have shown that two-parent families are likely to be better off economically than other family types, and some have argued that the declining prevalence of intact families might explain increased income inequality in recent decades (Bloome, 2017; Martin, 2006; Western et al. 2008). For example, single-parent families headed by a mother were more than five times more likely to be poor than husband-wife families with children (Shrider et al., 2021). This is primarily because children have less access to parental resources, both time and money, or even broader familial and community resources, when growing up outside two-parent families (Bird, 2007; Bloome, 2017; Greenwood et al., 2003).

Such a lack of resources associated with family structure can lead to long-term effects. McLanahan (2004) argued that current changes in family structure, particularly an increase in cohabitation, divorce, and nonmarital childbearing, have led to greater disparities in children's access to parental resources, driving the phenomenon of "diverging destinies," that is, a widened

gap in children's life achievement between children raised within and outside two-parent families. According to a study that analyzed data from the National Longitudinal Survey of Youth, regardless of parental income, those raised outside two-parent families were more likely to become low-income adults and less likely to become high-income adults than people from stable two-parent homes (Bloome, 2017). This relationship has been found in other longitudinal data as well: Lopoo and DeLeire (2014) examined whether childhood family structure was related to a child's economic well-being during childhood and adulthood using the Panel Study of Income Dynamics data. The authors found that living with a single parent was associated not only with a lower level of family resources in childhood but also with the child's lower educational attainment and family income in adulthood.

Child Support Policy to Mitigate the Intergenerational Transmission of Economic Status

Although evidence indicates that childhood family structure may influence adult economic outcomes, no studies have explored the effect of child support payments on a child's economic outcomes in adulthood. Child support could mitigate the relationship between single-parenthood and negative outcomes. The intent of child support policy is to ensure noncustodial parents pay an appropriate amount for the care of their children, holding parents responsible for the financial support of their children and providing sufficient income to improve children's financial status and reduce public costs associated with welfare (Cancian & Meyer, 2018; Huang & Han, 2012).

Child support policy involves three interrelated processes: paternity establishment, order establishment, and order enforcement (Cancian & Meyer, 2018; Pirog & Ziol-Guest, 2006). In the case of unmarried parents, paternity needs to be established or acknowledged in order to set a child support order; in divorce cases, paternity is presumed. As in many states, establishing an

order for child support in Wisconsin, from which our data are drawn, involves a court action. For unmarried couples, this can occur at the request of either party or the child support program; for divorcing couples, this typically occurs at the time of the divorce. Each state has a child support guideline that is to be used to determine whether there is a child support order, and its amount, unless there are particular reasons to assign a different amount. While guidelines differ somewhat across states, they generally follow a principle of continuity of expenditures, that noncustodial parents should provide support at a level so that expenditures on children are the same as if parents were living together (Venohr, 2013). Once a child support order is in place, enforcement actions can be taken to make sure the order is being paid. Enforcement actions can be preventive (withholding the amount due from the paycheck of the noncustodial parent from the day it is due) or in response to nonpayment (suspending drivers' licenses, initiating liens, even up to incarceration) (e.g., Meyer et al., 2020).

Prior studies have shown that child support is an important part of a custodial parent's income and thus plays an important role in the economic well-being of custodial-parent families, especially families who would otherwise be poor (Berger & Font, 2015; Cuesta & Meyer, 2014; Sorensen, 2016). Receipt of child support is known to be associated with lower poverty among children living with single parents (Bartfeld, 2000; Cuesta & Meyer, 2014; Hakovirta, 2011; Meyer & Hu, 1999; Sorensen, 2016). Cancian and Meyer's (2005) analysis of Wisconsin's state administrative data showed that child support is a key income source for low-income families, reducing pre-child-support poverty rates by 16 percent and closing the poverty gap by an average of 44 percent. Huang and colleagues (2002; 2004) also showed that child support could help young mothers exit and stay off welfare programs. Specifically, women with $1,000 or more in

child support payments in the previous year were 18 percent more likely to exit welfare and 12 percent less likely to re-enter welfare.

Relatedly, studies suggest that children of single parents may experience lifetime economic disadvantage and are more likely to stay unmarried or divorce themselves (Lersch et al., 2021; McLanahan & Sandefur, 1994; Mikkonen et al., 2016). So far, no direct evidence exists regarding the long-term effect of child support receipt on single-parent status as an adult. Given the aforementioned positive impacts of the policy, receipt of child support may serve to mitigate the intergenerational transmission of divorce/single parenthood (Amato, 1996; D'Onofrio et al., 2007; Whitton et al., 2008).

Despite significant policy impacts and tools for enforcement, such as income withholding or a centralized collection and disbursement agency, the problems associated with nonpayment and low compliance have been consistently recognized (Hodges et al., 2020; Meyer, et al., 2020). In 2017, less than half (45.9%) of custodial parents with a child support order received full payments, while 24 percent received a partial amount and 30 percent received no payments at all (Grall, 2020). An analysis of Wisconsin administrative records showed that only about half of those who received some child support in a year received it regularly (Ha et al., 2012). In 2018, over $118 billion was owed in past-due child support payments (U.S. OCSE, 2019). This no- or partial-payment of child support is particularly troublesome given that many custodial parent families are economically vulnerable and live below the poverty line (Berger et al., 2021; Grall, 2020), which may contribute to a long-term negative impact on children's economic outcomes.

THE PRESENT STUDY

The current study aims to examine the long-term effects of receiving support as a child on economic outcomes in adulthood. The question is difficult to answer for several reasons.

First, longitudinal data over a long period of time is needed, and this is seldom available. Second, simple comparisons between those who do and do not receive support would be biased because those who received support may have also had other advantages during their childhood. Finally, and related, the appropriate comparison group is unclear: for example, should we compare those who received support with all of those who did not, or only those who were supposed to receive support (i.e., had a child support order) but did not? We address the question with two complementary studies. Both studies use a long record of longitudinal data, allowing consideration of long-term economic outcomes. But they differ in their approach to comparison groups, thus harnessing the complementary strengths of two distinct approaches to test hypotheses.

The first study examined children in the Wisconsin CSDE, an intervention from the late 1990s in which low-income mothers receiving welfare benefits were randomly assigned to receive either all or some of the child support that was paid on their behalf during periods of benefit use. The impact evaluation of this intervention showed that those in the full-receipt group did receive more child support than those in the partial-receipt group, both because of the mechanical effect when they did receive benefits and because fathers were more likely to pay and paid more if their children were to receive everything paid (Cancian et al., 2008). Moreover, those in the full-receipt group established paternity more quickly (Cancian et al., 2008). Information on whether a child was in the full child support group of the partial child support group was then merged with Wisconsin's administrative records of benefits and earnings from the Unemployment Insurance data several years later to assess four economic outcomes when these individuals were adults: earnings, employment status, public program (i.e., Supplemental Nutrition Assistance Program (SNAP)/Food Share) participation, and public program benefit

amounts. We also examine a fifth outcome, having an open child support case as an adult, which allows us to consider whether receiving child support as a child is related to nonmarital births or divorce as an adult. A key strength of this study is that random assignment assures equivalent comparison groups on both observable and unobservable characteristics, supporting a causal interpretation of any estimated differences in outcomes between the groups. Moreover, we use the data to examine three comparison groups. The first comparison is among those who already have child support orders; the second comparison is among those who have had paternity legally established, whether there is an order or not; and the third comparison is among all those demographically eligible for child support, not just those who already have paternity established or child support orders. By looking at those who may have obtained paternity or orders because of child support's potential, we can explore the long-term effects of child support for a different population, albeit still a welfare sample. One limitation is that the sample is children whose mothers received welfare, limiting our ability to generalize to a broader population.

The second study used the Wisconsin Court Record Data (WCRD), which contain divorce and paternity (nonmarital) cases from the early and mid-1990s. Using propensity score matching (PSM) methods, we developed statistically matched comparison groups of children, one group who received support when they were children and a comparable group who did not receive support (or received very small amounts) but were due support. Using the same methods, we also contrast children who received nearly all the support they were due with a comparable group who did not. These data were also merged with administrative records to gather the same set of outcome variables as was used in the first study. A key strength of the study is that it compares all those with child support orders, not merely a welfare sample. A limitation is that the two groups may not be comparable on unobserved factors (though the PSM model attempts

to ensure comparability on observed factors), limiting our confidence that any estimated relationships are causal.

Because the two analyses draw on related data and measures, each will inform the other; for example, if relationships measured in the first study are confirmed in the second, we can be more confident that the statistical approach used in the first supports a causal interpretation.

Our specific hypothesis to test in both studies is: Adults who received support as children will have higher rates of earnings; be more likely to be employed; have lower public program participation; receive less in public benefits; and be less likely to have an open child support case than those who did not receive child support or received very little.

In the second study, we also test a related hypothesis, considering the same outcomes, but instead of differentiating between those who received child support versus those who received none or only a little, we differentiate between those who received most of what was due (higher compliance) compared to those who received a lower percentage of what was due (lower compliance).

STUDY 1: CSDE, WELFARE SAMPLE, RANDOMIZED GROUPS

Data and Methods

Data and Sample

We use data from the Wisconsin CSDE, a large-scale random-assignment experiment of the treatment of child support for Temporary Assistance for Needy Families (TANF) recipients in Wisconsin. All those who participated in TANF between September 1997 and July 1998 were randomly assigned to either receive all child support paid on their behalf during a period of welfare use or only a part (the first $50/month or up to 41% of the amount paid, if it was more). The intervention and its evaluation are described in more detail in Cancian, Meyer and Caspar

(2008). The evaluation used the welfare records to do the randomization, and to identify basic characteristics of the mothers and children involved. Records were matched with the child support records to ascertain whether paternity had been legally established, whether child support was due, and payments of child support. Social security numbers of children receiving welfare are available, so we use these numbers to match these individuals with their UI earnings records, benefit records, and child support records several years later.

The sample includes those children in the evaluation data whose mothers were assigned to either the group who received everything paid on their behalf (n = 28,128) or the group who received only partial support during periods of benefit receipt (n = 7,665).[2] To match the sample in Study 2, which included those with child support orders (who therefore had had paternity established), from the 35,793 we select as our base sample only those who at entry to TANF had had paternity established and whose mothers were owed child support, a total of 17,923 children. The intervention could have affected paternity establishment and child support orders, so we also increment our base sample with those who had had paternity established at entry but whose mothers were not owed support (total n = 25,400) and further increment with those who did not have paternity established at entry (total n = 35,793). If child support's potential brought these mothers into the child support system and then their children began to receive support, we would capture this only in analyses with the larger samples.

Outcome Variables

We examine our five outcome variables in the state's administrative records, matching whether children were in the full support or partial support group with their adult outcomes,

[2]We begin with 36,081 children in the evaluation sample and exclude 288 individuals that were older than 16 years old at baseline.

using social security numbers. The employment and earnings outcomes are taken from the state's Unemployment Insurance records, and thus represent earnings in formal jobs in Wisconsin. In these data, employers report a total amount of earnings for each individual for each calendar quarter. We sum across all employers in the four calendar quarters of 2019 to get annual earnings. The vast majority of in-state earnings in formal employment are included in these records. Examples of earnings not in the records include informal earnings, earnings from some small religious organizations, and earnings in another state. Self-employment is not included. Even with these limitations, this is a substantially comprehensive source of information on earnings in Wisconsin (Wisconsin Department of Workforce Development, 2019), and these records are often used in research on labor markets (see, e.g., Wallace & Haveman, 2007). Our measure of employment is straightforward, whether there were any reported earnings during the calendar year.

Our third and fourth outcomes are related to benefits in SNAP, the most common source of benefits to low-income individuals. Coverage is complete in that all individuals receiving these benefits in Wisconsin are in the administrative records. We measure benefits by both the total amount received during calendar year 2019 and whether any benefits were received during the year.

Finally, we include a measure of whether the individual has an active case in the child support records in Wisconsin. For unmarried parents, active child support cases occur when paternity needs to be established or a child support order is sought; for married parents, active cases occur when there is a legal separation or divorce, and a child support order is sought.

The original assignment to the full or partial support group occurred in 1997 and 1998, when the children we examine were aged 0–16. By 2019 they are aged 21–38.

Groups

In this study the groups are easily determined; we differentiate between the full-receipt group and the partial-receipt group, regardless of whether child support was actually received.

Determining Equivalent Groups

Randomization means that the groups are equivalent except by chance. Table 1 shows simple comparisons between the partial support and the full support groups for our five outcomes. Earnings are fairly low, averaging around $12,000 – $13,000. About two-thirds of sample members had formal employment in the Wisconsin records. Economic disadvantage is further highlighted in that around 40% received SNAP, with the overall average about $1000 in 2019. About half the children of welfare participants had an open child support case in 2019. There are differences between the partial and full support groups, but these do not control for other factors.

Table 1 also shows the characteristics of both groups at the time they entered TANF (1997–98). While there are a few differences between the groups that are statistically significant at the $p < .05$ level, overall, the groups are well matched, as confirmed by additional analyses shown in the original evaluation. To control for these differences (that presumably occurred by chance), we include the variables that differ in our equations examining the relationship between being in the full child support group and later outcomes.

Table 1. Study 1: Characteristics of those in the Full and Partial Child Support Groups

	Sample 1		Sample 2		Sample 3	
	Partial Support	Full Support	Partial Support	Full Support	Partial Support	Full Support
Outcomes						
2019 Earnings	$12,758	$13,125	$12,295	$12,955**	$11,787	$12,335*
	(16,027)	(16,370)	(15,969)	(16,399)	(15,821)	(16,255)
2019 Employment	65.7%	65.3%	63.7%	64.4%	61.7%	61.9%
2019 SNAP Amount	$1,094	$1,048	$1,030	$980^{+}	$1,008	$953*
	(1,954)	(1,898)	(1,895)	(1,846)	(1,901)	(1,824)
2019 Any SNAP	43.6%	42.0%$^{+}$	41.3%	39.6%*	39.8%	38.5%*
2019 Child Support Case	55.6%	55.1%	52.9%	51.8%	51.2%	50.4%
Child Age	6.36	6.39	6.16	6.19	6.12	6.17
	(4.01)	(4.05)	(4.25)	(4.25)	(4.35)	(4.37)
Child Male	49.5%	49.8%	50.1%	49.9%	49.9 %	50.1%
Child Race/Ethnicity						
White	16.9%	15.9%	18.3%	17.7%	15.0%	14.6%
Black	54.0%	53.1%	51.3%	50.6%	52.2%	51.7%
Other	0.0%	0.0%	0.0%	0.0%	3.8%	3.9%
Missing	29.1%	31.0%*	30.4%	31.6%$^{+}$	29.0%	29.8%
Focal Child's Non-Resident Parent's Earnings Were $15,000 or More (relative to $0–$14,999)	10.3%	10.4%	9.5%	9.4%	7.7%	7.4%
Mother's Child Support in Last Year						
No Child Support	44.2%	41.6%**	56.9%	53.9%***	62.7%	61.4%*
$1–$999	26.2%	25.4%	20.9%	21.0%	18.5%	17.8%
$1,000 or More	29.6%	33.0%***	22.2%	25.1%***	18.8%	20.8%***
Mother's Age						
25 or Younger	39.8%	38.4%	41.2%	39.2%**	40.1%	38.4%**
26–30	29.6%	28.1%$^{+}$	26.2%	26.3%	25.8%	25.6%
31 or Older	30.6%	33.4%***	32.6%	34.5%**	34.1%	36.0%**
Mother's Education						
Less than HS	53.3%	54.2%	54.1%	54.6%	56.1%	56.8%
HS Diploma	36.5%	36.6%	36.4%	36.2%	34.9%	34.5%
Some College or More	10.1%	9.2%$^{+}$	9.5%	9.2%	9.0%	8.7%

	Sample 1		Sample 2		Sample 3	
	Partial Support	Full Support	Partial Support	Full Support	Partial Support	Full Support
Mother's Employment in Previous 8 Quarters						
0 Quarters	15.6%	16.9%+	17.8%	18.7%	20.0%	20.8%
1–4 Quarters	45.8%	44.0%+	44.3%	43.1%	44.6%	43.2%*
5–8 Quarters	38.5%	39.2%	37.9%	38.3%	35.4%	36.0%
Number of Legal Fathers in Mother's Family						
Zero	1.3%	1.5%	10.5%	10.3%	21.9%	22.7%
One	51.9%	53.7%+	54.0%	55.0%	49.2%	49.4%
Two or More	46.8%	44.9%*	35.4%	34.7%	28.9%	27.9%+
Number of Children						
Zero	0.0%	0.0%	0.2%	0.1%	0.2%	0.1%
One	10.1%	10.7%	14.3%	15.0%	14.1%	14.5%
Two	27.0%	26.4%	26.6%	25.5%	25.8%	24.8%+
Three or More	62.9%	62.9%	58.9%	59.4%	60.0%	60.6%
Mother's AFDC Use in Prior 24 Months						
0 Months	5.2%	4.9%	9.3%	8.7%	10.0%	8.9%***
1–18 Months	25.2%	26.3%	28.6%	29.4%	29.4%	29.7%
19–24 Months	69.6%	68.8%	62.1%	61.9%	60.6%	61.4%
Initial W-2 Tier						
Cash and Services	59.2%	59.8%	59.2%	59.4%	61.1%	61.2%
Caretaker of Newborn	5.5%	5.6%	8.0%	7.6%	7.8%	7.5%
Services Only	35.4%	34.6%	32.8%	33.1%	31.1%	31.3%
County						
Milwaukee	77.0%	77.2%	73.3%	73.7%	75.7%	76.1%
Other Urban	14.9%	15.0%	17.1%	17.1%	16.4%	16.0%
Rural	8.1%	7.8%	9.6%	9.2%	8.0%	7.8%
Observations	3,541	14,382	5,489	19,911	7,665	28,128

Notes: Variable names reflect the fact that mothers were the unit of analysis in the original impact study. Parenthetical values display standard errors.
+ p<.10 * p<.05 ** p<.01 *** p<.001

Methods

Random assignment is a powerful tool, ensuring that groups are equivalent except by chance. As a result, a simple comparison of those in the partial support and the full support group provides an estimated effect of the CSDE. However, a few characteristics do differ, so we control for these; we also control for variables that may affect the outcomes to sharpen the estimated effect of CSDE (Bloom, 2006). We use an ordinary least squares regression for the continuous outcomes (earnings and SNAP benefit use) and a probit for the dichotomous outcomes (employment, SNAP receipt, and child support case).

Results

Table 2 shows our primary Study 1 results, with the full results in Appendix Table 1. Though children in the full child support group in the base sample had a difference in 2019 earnings in a positive direction (about $305/year more in earnings, all else equal), the effect was not statistically significant. The difference between groups was significant in the first (difference of $543/year) and the second ($477/year) alternative samples.[3] No detectable relationships were found for employment in any of the samples. In the second and third alternative samples, we find that the full child support group received significantly lower SNAP benefits as adults. The full support group in the first alternative sample received $54 less in SNAP benefits than the partial support group, and the full support group in the second alternative sample received $56 less in benefits. In the second alternative sample, children in the full child support group were also about two percentage points less likely to have any SNAP benefits. No relationships were found for having an open child support case.

[3]Tobit sensitivity analyses suggest a magnitude of difference in earnings similar to our primary models between treatment and control groups in base sample and the first and second alternative samples, though the effects are not statically significant (see Appendix Table 5).

Table 2. Study 1: Association between Being in the Full Child Support Group during Childhood and Adult Outcomes: 3 Samples

	2019 Earnings	2019 Employment	2019 SNAP Amount	2019 Any SNAP Receipt	2019 Kids Case	Observations
Base sample: Those with a legal father and a child support order	$305	-0.0054	$-38	-0.0140	-0.0020	
	(337)	(0.0102)	(38)	(0.0100)	(0.0098)	17,923
First alternative sample: Those with a legal father (with or without child support order)	$543*	0.0034	$-54^{+}	-0.0170*	-0.0118	
	(277)	(0.0085)	(30)	(0.0081)	(0.0082)	25,400
Second alternative sample: All children in CSDE (those with or without legal father; with or without child support order)	$477*	0.0007	$-56*	-0.0135	-0.0084	
	(239)	(0.0076)	(27)	(0.0071)	(0.0074)	35,793

Notes: Models control for Child age, Child sex, Child Race/ethnicity, the Focal Child's Non-resident Parent's earnings, Mother's Child Support in Last Year, Mother's age, Mother's Education, Mother's Employment in Previous 8 Quarters, the Number of Legal Fathers in Mother's Family, the Number of Children, initial assignment, Initial W-2 Tier, AFDC Use in Prior 24 months, and County. For earnings and SNAP amounts, ordinary least squares regressions are used; for the other outcomes, we use probit models and show marginal effects. Parenthetical values display robust standard errors.
+ p<.10 * p<.05 ** p<.01 *** p<.001

Next, we examine heterogeneity in the effect of receiving full support compared to partial support as a function of a child's age. In Table 3, we compare children that are zero to five during the time of the experiment to those six to sixteen. In the base sample, we find no significant differences within nor between age groups. In the first alternative sample (shown in the middle panel of Table 3), older children in the full support group had higher 2019 earnings of about $1,000/year ($p < .05$), received fewer SNAP benefits in terms of average amounts ($p < .10$), and were two percentage points less likely to receive any SNAP benefits ($p < .10$). The between group difference for 2019 earnings ($966 for children that were older during exposure compared to $68 for children that were younger) was marginally statistically significant. The second alternative sample is displayed on the bottom panel of Table 3. Though the magnitude of different effects varies slightly, we find a pattern of results like those derived from the first alternative sample. In summary, there are no statistically significant relationships for younger children, but older children show several statistically significant relationships, especially in earnings and the amount of SNAP benefits used.

Table 3. Study 1: Association between Being in the Full Child Support Group during Childhood and Adult Outcomes by Age: 3 Samples

	2019 Earnings			2019 Employment			2019 SNAP Amount			2019 Any SNAP Receipt			2019 Kids Case		
	≤ 5	6 to 16	Diff	≤ 5	6 to 16	Diff	≤ 5	6 to 16	Diff	≤ 5	6 to 16	Diff	≤ 5	6 to 16	Diff
Base sample: Those with a legal father and a child support order	$31 (390)	$513 (437)	ns	-.0161 (.0133)	.0035 (.0120)	ns	$3 (43)	$-75 (50)	ns	-.01471 (.0133)	-.0145 (.0118)	ns	.0048 (.0139)	-.0073 (.0122)	ns
Observations	7,692	10,231	17,923	7,692	10,231	17,923	7,692	10,231	17,923	7,692	10,231	17,923	7,692	9,297	16,989
First alternative sample: Those with a legal father (with or without child support order)	$68 (310)	$966** (371)	+	-.0084 (.0106)	.0149 (.0102)	ns	$-37 (33)	$-73^{+} (42)	ns	-.0188^{+} (.0103)	-.0164^{+} (.0099)	ns	-.0143 (.0108)	-.0108 (.0103)	ns
Observations	11,539	13,861	25,400	11,539	13,861	25,400	11,539	13,861	25,400	11,539	13,861	25,400	11,539	12,455	23,994
Second alternative sample: All children in CSDE (those with or without legal father; with or without child support order)	$123 (254)	$811** (316)	+	-.0073 (.0091)	.0096 (.0087)		$-30 (27)	$-80* (36)	ns	-.0110 (.0086)	-.0150^{+} (.0084)	ns	-.0054 (.0092)	-.0121 (.0091)	ns
Observations	16,573	19,220	35,793	16,573	19,220	35,793	16,573	19,220	35,793	16,573	19,220	35,793	15,963	16,379	32,342

Notes: Symbols in the Diff columns reflect difference between age subgroups. Models control for Child age, Child sex, Child Race/ethnicity, the Focal Child's Non-resident Parent's earnings, Mother's Child Support in Last Year, Mother's age, Mother's Education, Mother's Employment in Previous 8 Quarters, the Number of Legal Fathers in Mother's Family, the Number of Children, initial assignment, Initial W-2 Tier, AFDC Use in Prior 24 months, and County. For earnings and SNAP amounts, ordinary least squares regressions are used; for the other outcomes, we use probit models and show marginal effects. Parenthetical values display robust standard errors.
+ p<.10 * p<.05 ** p<.01 *** p<.001

STUDY 2: WCRD, BROADER SAMPLE, STATISTICALLY EQUIVALENT GROUPS

Data and Methods

Data and Sample

The Wisconsin Court Record consists of cases coming to family court in 21 Wisconsin counties that have child support potential, that is, (a) parents of a minor child filed for divorce or legal separation; (b) a parent or the child support agency filed to establish paternity of a minor child, or (c) a parent of a minor child filed for a child support order. We consider cases with court petition dates from 1989–1992. Information was collected from case records, including demographic information on parents and children and characteristics of the court process (e.g., whether the parents had legal representation). The record also contains the outcome of the court process, including placement (the child's living arrangement) and the amount of child support ordered. We merge this information with the state's administrative record of child support payments.

Because most children's social security numbers are available in the court records, we can match with their employment, earnings, benefit use, and child support records many years later, when they are adults. The employment and earnings outcomes are taken from the state's Unemployment Insurance records, and thus represent earnings in formal jobs in Wisconsin. Benefit use is also taken from Wisconsin administrative records of benefit programs. Finally, whether an individual has an open child support case comes from the administrative records of the Wisconsin child support program.

In the court record, there are 2,260 children aged 16 or less at the petition, with petitions occurring from 1989 to 1992, whose mothers had sole physical placement.[4] We exclude 494 children who did not have social security numbers, 36 children known to have died, and 169 children who did not have a child support order, since we want the comparison to be only among those for whom child support receipt was a possibility. This leaves 1,561 children in our preliminary analysis sample.

Outcome Variables

We examine five outcomes, all measured in 2019, so 27 to 30 years after the original court petition. Because children were aged zero to 16 at the court petition, outcomes were measured when they were 27 to 46. We use the same data sources and operationalizations as in the first study. That is, we consider whether those who received support as children in 1989–1992 had higher earnings, more employment, less SNAP benefits, and were less likely to receive SNAP in 2019.

Groups

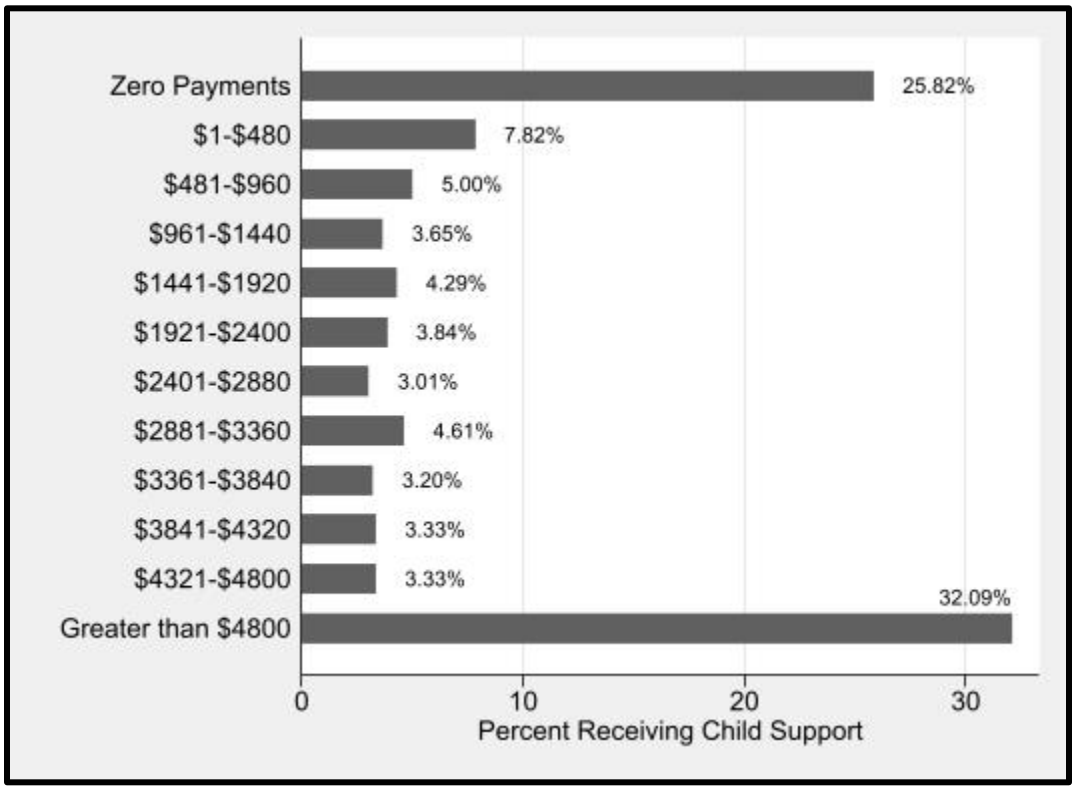
Child support vs. no/very low support. Our objective is to approximate random assignment, that is, to determine two groups, one of which received very little or no child support when they were children, and one that received more, but the two groups are otherwise statistically equivalent. We measure child support receipt by the custodial-parent family during the first two years after an initial amount of child support was due as shown in the administrative record.[5] Approximately 6% of children received no support (see Figure 1), and 7.8% of children

[4]This excludes those with shared placement, many of whom have very low or no child support orders.

[5]Research using national data show that there are different trajectories of child support receipt over time (Sariscsany, Garfinkel & Nepomnyaschy, 2019). Research using Wisconsin records suggests that while there is some movement between payment categories, most of those who pay in full in one year continue to pay in full the

received very small amounts (more than zero but less than $20/child/month). Many families received more substantial amounts, averaging $3,620 per child over two years (or about $151/month), with a median of $2,315 (or about $96/month).

Figure 1. Distribution of Child Support Receipt Over Two Years



While a simple division could be between those who receive no child support and those who receive some, even $1, we prefer to treat very low amounts as essentially equivalent to none since they will not have a large effect on the recipient's budget. There is no theory or previous research on the long-term effects of child support to guide a decision on the precise amount of child support that should be used to divide the two groups. Some related research has included those who receive income of up to $20/month from a particular source as the control condition

next year, and most of the nonpayers continue to be nonpayers (Meyer & Bartfeld, 1998). This suggests that relying on the first two years of the order to define payment groups, while imperfect, is not particularly problematic.

(e.g., Troller-Renfree et al., 2022); we follow this perspective, dividing between those who receive on average less than $20/child/month from those who receive more. This results in 525 children in the low child support group (34% of our sample), and 1,036 who received more in our preliminary analysis sample.[6] In our final analysis sample, 519 children are represented in the low support group and 1016 are represented in the high support group.[7] For simplicity, we hereafter refer to the up to $20/month group as "no child support," as most of the children (77%) in this group actually received nothing.

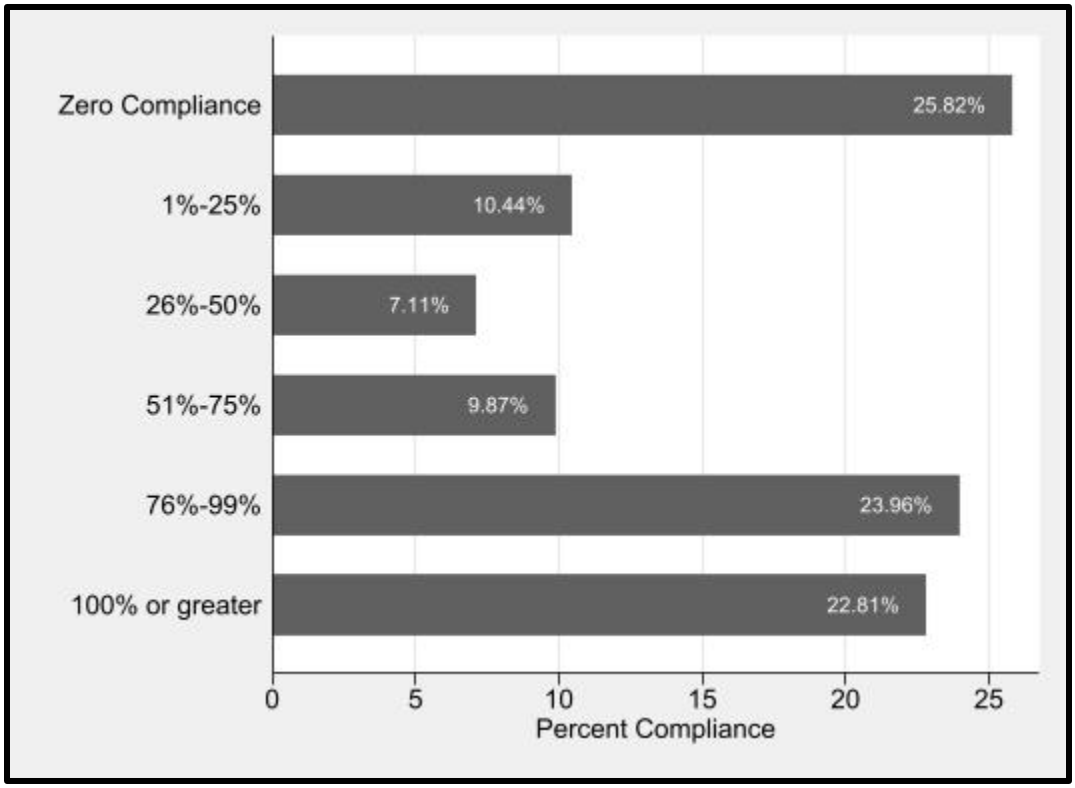
High and low compliance. An alternative perspective is that it is not the dollar amount of child support that is most important, but whether the amount that was due was actually paid (compliance). We calculate a compliance rate, dividing what was paid by what was owed over the first two years, and we show the results in Figure 2. As we have already seen in Figure 1, about 26% of children received nothing, so had zero compliance. About 23% of children had parents who were 100% or more compliant. The average compliance rate in the sample was 61%, and the median compliance rate was 69%. We divide children into two groups, those for whom the amount of child support paid was at least 75% of what was due, compared to those with lower compliance (less than 75%). Again, the precise demarcation point is not clear from prior research; using 75% rather than 100% allows for some measurement error and captures those who receive most of what was due. This division means 732 children are in the high compliance group (nearly half) and 829 are in the low compliance group in our preliminary

[6]Because some children were nested within families, we used robust and cluster-robust (where possible) standard errors, clustering on the child support case identifier (a mother-father pair).

[7]This final analysis sample met the assumptions of the treatment estimator, including conditional independence, overlap, and the independent and identically distributed assumptions.

analysis sample. There are 720 children in the high compliance group and 818 children in the low compliance group in the final analysis sample.[8]

Figure 2. Distribution of Child Support Compliance Over Two Years



Variance in the level of child support orders means the payment groups and the compliance groups are not identical. Some with higher orders receive a substantial amount of support but it is still less than 75% of what is due, so have low compliance. In our preliminary analysis sample, 20% of children who received more than $20/month had parents with compliance rates below 75%. Comparing the results from the two approaches will inform the interpretation.

[8]This final analysis sample met the assumptions of the treatment estimator, including conditional independence, overlap, and the independent and identically distributed assumptions.

Determining Equivalent Groups

A simple comparison of adult outcomes for those who received child support as children and those who did not could be biased if the two groups were different in other characteristics. As expected, they are substantially different (table not shown). For example, 42% of those who did not receive support lived in Milwaukee County, compared to 21% that did receive support. The fathers and mothers of those who did not receive support were 5–6 years younger than the fathers and mothers of those who did. In fact, of the 42 characteristics we tested, 39 were statistically (or marginally) significantly different between the two groups. The high and low compliance groups were similarly distinct as 38 characteristics we tested were significantly different between groups.

To make the child support and no child support groups equivalent, we use propensity score matching (PSM) methods. PSM is a method of dividing groups with the objective of approximating random assignment (Austin, 2011; Rosenbaum & Rubin, 1983). The goal is to generate two groups that differ only with respect to child support (treatment) status. Propensity score matching is carried out in two integrated steps. In the first step, we leverage logit or probit models to calculate a participant's propensity for receiving child support (Rosenbaum & Rubin, 1983).[9] In the second step, we use the propensity scores to generate equivalent groups. This can be done with several matching methods. In our main models, we use nearest neighbor matching with replacement; essentially this means that for each child who received support we look for a

[9]Rosenbaum and Rubin (1983) define the propensity score as follows:

$$P(Tx) \equiv \Pr(Tx = 1|X) = E(Tx|X) \quad (1)$$

where $P(Tx)$ is the propensity to receive child support or to have a highly compliant parent, Tx indicates whether payment and compliance were above the threshold used to assign individuals to the treatment condition, and X is a vector of covariates affecting whether a child did or did not receive child support or have a compliant parent. Logit and probit models are both models to estimate dichotomous outcomes; we use the model that results in the best matches.

child that did not receive support that had similar propensities. "Good" matches (defined by the level of difference in the propensities) are kept, and a child without a "good" match is not used in the final analysis sample.[10] To evaluate whether the two groups are equivalent after the matching procedure has finished, we calculate the standardized mean difference (SMD) and variance ratios for the sample before and after the matching model. The covariates used to predict children's propensity to receive child support and SMDs and variance ratios are presented in Appendix Table 2. SMDs less than .25 and variance ratios ranging from .5 to 2 indicate satisfactory balance between the two groups (Rubin, 2001). The appendix table shows that the raw data are not matched well, but after the matching procedure, almost all variables fit within the definition of a satisfactory match. To ensure our results were robust to our choice of analytic approach, we also employ two other matching algorithms (kernel and radius)[11] and use regression adjustments as another test.[12,13]

[10]We use the Stata command 'teffects psmatch' with robust standard errors to derive analogous treatment and control groups and match 1:3 nearest neighbors for payment and 1:2 nearest-neighbors compliance models, respectively.

[11]We use Stata the command 'psmatch2' to generate propensity scores using kernel and radius algorithms. We implemented empirical bootstrap sampling techniques with 1,000 repetitions to estimate standard errors for statistical inference. We leverage Rubin's B (the absolute SMD of the linear index of the propensity score in the treated and matched untreated group) and R (the ratio of treated to matched untreated variances of the propensity score index) to assess covariate balance between treatment and control conditions (Rubin, 2001). For payment and compliance models, Rubin's B was less than 25 and/or Rubin's R fell between 0.5 and 2, indicating sufficient covariate balance. For radius matching, we used a .25 caliper to match cases, and we used a bandwidth of .13 for kernel matching for payment models. For compliance models, we use a .10 caliper to match cases, and we used a bandwidth of .06 for kernel matching.

[12]For the regression adjustment method, we use the Stata command 'teffects ra' with cluster-robust standard errors with case membership as the cluster. This empirical strategy estimates treatment effects using a two-step approach. First, two respective models are fit regressing the outcome of interest on covariates at each level of treatment. Second, averages of the predicted outcomes for each child and treatment level are calculated, reflecting potential outcome means. To obtain estimates of the average treatment effect on the treated, we limit this calculation of means to children in the treatment conditions (child support or high compliance).

[13]An alternative modeling approach was used to assess whether findings from the regression adjustment model were robust, ensuring results were not sensitive to our choice of modeling technique. For the supplemental analyses, we use Tobit models (Tobin, 1958) to account for the fact that 2019 earnings cluster at $0, such that earnings are left-censored. These supplemental analyses result in similar conclusions.

The PSM model allows us to estimate the difference in outcomes for those who received child support as children to what the outcome would have been had they not received support (the average treatment effects for the treated, ATT).[14] The propensity to be in the child support group, the matching of those in the child support group and the group without support, and the estimated effect on outcomes (e.g., employment as an adult) are all estimated simultaneously.

These procedures are then repeated to generate the high- and low-compliance groups. These groups are also statistically equivalent after matching, as seen in Appendix Table 3. We conduct additional sensitivity analyses stratifying by child age at the time of child support receipt, comparing children zero to five at the time of receipt to those six to sixteen. As a final sensitivity test, we also carry out analyses excluding children who may be living out of state, since the administrative records of their earnings and benefit use will be incomplete.[15]

Results

Table 4 shows our main results, with the results from our base method (nearest-neighbor matching) in the first column, and results from alternative matching techniques in the remaining columns. These children were matched based on propensities to receive child support or have

[14]We present average treatment effects for the treated (ATT), which is formally defined as follows:

$$ATT = E(Y_1|Tx = 1) - E(Y_0|Tx = 1) \quad (2)$$

where $E(Y_1|Tx = 1)$ signifies an outcome, Y, for children receiving the treatment, Tx (i.e., substantial child support or with compliant parents, and $E(Y_0|Tx = 1)$ represents the unobserved counterfactual outcome for those same children (i.e., outcome had they not received the treatment). PSM imputes the potential outcome, which is missing, for each child by averaging outcomes of similar children who received the alternative treatment. Similar children are defined by their probabilities (or propensities) to be treated. The average difference between observed and potential outcomes for each child is computed to estimate the treatment effect. Where sufficient balance in PSM models is achieved, the remaining differences in outcomes between groups are considered the ATT.

[15]To illustrate why this might be a concern, consider that those not receiving child support may be more likely to be disengaged from their noncustodial parent, and may have less reason to live in Wisconsin as an adult than those who were closer to their noncustodial parent. If receiving child support is associated with staying in state, we would be more likely to see earnings in the Wisconsin records for those who received support. Eliminating those who we think are out of state in our view "over-corrects" since we will be excluding some who continue to live in Wisconsin but are self-employed and do not receive benefits nor do they have a child welfare report.

highly compliant parents. Receiving child support as a child is associated with an increase in earnings as an adult of between $4,153 and $7,143/year. When using nearest-neighbor matching, the average amount of 2019 earnings we estimate if those in the child support group had not received the treatment would be $21,572; the estimated average for those in the child support group after receiving the treatment would be $28,225 (not shown in table). This is a large estimated increase, more than 30%. Estimates from all four algorithms are statistically significant or approach statistical significance.

Table 4. Study 2: Association between Child Support during Childhood and Adult Outcomes

Outcomes	Nearest Neighbor	Radius[a]	Kernel[a]	Regression Adjustment
Comparing Child Support Group With No Child Support Group				
2019 Earnings	$6,654*	$4,208+	$4,153+	$7,143*
	(2,721)	(2,436)	(2,493)	(2,832)
2019 Employment	.1122*	.0625	.0592	.1323**
	(.0438)	(.0392)	(.0392)	(.0494)
2019 SNAP Amount	$-160	$-52	$-30	$-12
	(134)	(82)	(84)	(104)
2019 Any SNAP	-.0604*	-.0209	-.0175	.0120
	(.0290)	(.0286)	(.0280)	(.0337)
Child Support Case	-.0364	-.0111	-.0076	.0260
	(.0406)	(.0359)	(.0386)	(.0411)
Observations	1,535	1,535	1,535	1,528
Comparing Higher Compliance Group to Lower Compliance Group				
2019 Earnings	$8,689***	$9,757***	$10,155***	$9,681***
	(2,615)	(2,271)	(2,229)	(2,146)
2019 Employment	.1257**	.1155**	.1296***	.1310***
	(.0432)	(.0368)	(.0398)	(.0378)
2019 SNAP Amount	$-19	$-29	$-26	$53
	(67)	(65)	(63)	(71)
2019 Any SNAP	.0111	-.0075	-.0046	.0293
	(.0192)	(.0187)	(.0183)	(.0219)
Child Support Case	.0201	.0028	.0045	.0134
	(.0335)	(.0305)	(.0320)	(.0319)
Observations	1,538	1,535	1,535	1,538

Notes:

[a]For these models, we implemented common support by excluding high support/ observations with the lowest propensity score density for the low support/compliance observations (or higher than a maximum or lower than a minimum propensity score for the control case), supporting covariate balance. For earnings and SNAP amounts, ordinary least squares regressions are used; for the other outcomes, we use probit models and show marginal effects. Parenthetical values display robust standard errors.

+ p<.10 * p<.05** p<.01 *** p<.001

Results suggest those who received child support as children are also more likely to be employed as adults, by six to thirteen percentage points, although all algorithms do not yield statistically significant relationships. The nearest-neighbor matching model predicts that the employment rate if those in the child support group had not received the treatment would be 53.35%, but that receiving the treatment increases the rate by 11.22 percentage points, to 64.57% (not on table). The dollar amount of SNAP benefits was lower for those receiving child support in all four models, though no models show a statistically significant difference. The likelihood of receiving any SNAP was lower for those receiving child support in all models, though only the base model result was statistically significant. The nearest-neighbor matching model estimates that 16.17% of the child support group would have received SNAP had they not received the support; receiving support decreases this by 6.04 percentage points (not shown in table). Finally, there is no detected relationship between child support receipt as a child and having a child support case as an adult.

The bottom panel shows adult outcomes for those with higher compliance as children compared to those with lower compliance. The relationship with earnings is even stronger than seen in the first panel; all estimates are statistically significant at the $p < .001$ level, and estimates are substantial in magnitude, over $8,500/year. The nearest-neighbor matching model estimates $22,382 in earnings if those in the higher compliance group had not received the treatment; this estimate increases to $31,071 with the treatment, an increase of 39% (not shown in table). Additionally, those with higher compliance as children are substantially more likely to be employed than those with lower compliance as children, by 11.6 to 13.1 percentage points. The nearest-neighbor matching model predicts an employment rate of 53.82% if those in the higher compliance group had not received the treatment; the treatment (high compliance) is associated

with an increase of 12.57 percentage points, to 66.39% (not shown in table). There are no differences between the compliance groups regarding benefits or having a child support case.

Income supports during a child's early years may have a larger impact than in middle or later childhood. In Table 5 we investigate the relationship between receiving support as a child (and receiving high compliance) and all outcomes for those age zero to five when the court petition was filed separately from those aged six to sixteen when the petition was filed and show results from our base model (nearest-neighbor matching). Within both age groups, the relationship between receiving support and later earnings is statistically significant; the results are larger for compliance. Young children during child compliance exposure earned $9,673 more as an adult and were 16.6 percentage points more likely to be employed than those with low compliance. Results for the older age group suggests similar differences, as older children earn $7,666 more and are 8.4 percentage points more likely to be employed, respectively (the differences between age groups is marginally statistically significant for employment). In both age groups, SNAP use as an adult is lower for those who received child support in their childhood; the compliance groups do not show this difference. Results suggested younger children who received more substantial child support payments were 6.9 percentage points less likely to have an open child support case as adults. In summary, there are relatively few differences between age groups.

Table 5. Study 2: Association between Child Support during Childhood and Adult Outcomes by Age

	Child Support Received		Child Support Compliance		Difference	
Outcomes	Zero to Five	Six to Sixteen	Zero to Five	Six to Sixteen	Payment	Compliance
2019 Earnings	$7,416***	$6,030***	$9,673***	$7,666***		
	(1,974)	(1,604)	(2,002)	(2,260)		
2019 Employment	.1270***	.0941***	.1662***	.0836*		
	(.0257)	(.0292)	(.0338)	(.0343)		+
2019 SNAP Amount	$-135*	$-190***	$30	$-69		
	(59)	(46)	(70)	(52)		
2019 Any SNAP	-.0459*	-.0780***	.0300	-.0085		
	(.0178)	(.0169)	(.0186)	(.0159)		
Child Support Case	-.0686**	.0029	.0191	.0212		
	(.0231)	(.0278)	(.0276)	(.0305)	*	
Observations	973	562	975	563	1,535	1,538

Notes: Symbols in the Difference columns reflect difference between age subgroups. For earnings and SNAP amounts, ordinary least squares regressions are used; for the other outcomes, we use probit models and show marginal effects. Parenthetical values display robust standard errors.
+ p<.10 * p<.05 ** p<.01 *** p<.001

As a final sensitivity test, we make an initial effort to identify and exclude cases that are likely to be out of state and exclude about 450 children (depending on the model) who were not reported in administrative records to be in the state of Wisconsin during any month in 2019. (The smaller sample size may make it less likely to be able to discern statistical relationships, however.) Appendix Table 3 shows results for the nearest-neighbor model. The relationship between child support payment and earnings, SNAP receipt, and the likelihood of receiving any SNAP are statistically significant ($p < .05$). Further, the relationship between compliance and earnings is statistically significant ($p < .05$); those who had higher compliance as children earn about $8,333 more as adults. None of the other relationships are statistically significant.

DISCUSSION

Children living with their mother, but not their father, typically have access to fewer resources and are more likely to be poor. Previous research also suggests diminished outcomes in later life, including lower employment and earnings. The child support system is designed to assure that children will benefit from the economic support of both parents, even if they reside with only one. We hypothesized that adults who received child support as children would have higher earnings; be more likely to be employed; have lower public program participation; receive less in public benefits; and be less likely to have an open child support case than those who did not receive child support or received very little. To test these hypotheses, we completed two sets of analyses: comparing families receiving welfare benefits who were randomly assigned to receive all, or just some, child support paid on their behalf; and comparing single mother families receiving, or not receiving child support (and those with higher versus lower compliance) using propensity score matching (PSM) to derive otherwise equivalent comparison groups. The validity of the second study depends critically on the adequacy of the PSM;

unobserved differences not adequately captured by the models may bias the estimates. The first study relies on random assignment, supporting causal analysis, but is limited to a relatively narrow sample: families receiving cash assistance.

We supported the first hypothesis: Across both studies, we find evidence of a statistically significant increase in adult earnings associated with child support receipt. Our experimental comparison of children of mothers receiving cash welfare shows those in the full child support group had about $500/year higher earnings in 2019 than those in the partial support group in the alternative samples, all else equal. Among the broader sample of children of mothers with a child support order, and relying on propensity score matching estimates, receiving child support as a child is associated with an increase in earnings as an adult of between $4,153 and $7,143/year, and those with higher compliance as children (compared to those with lower compliance) averaged over $8,500/year greater earnings. While both analyses support a finding of higher earnings for those receiving child support, the differences in the quasi-experimental comparison are substantially greater, which we discuss below.

We had partial support for the second hypothesis: In Study 1, receipt of child support was not associated with employment status as adults. In Study 2, child support receipt was associated with adult employment status in all four models (though two were not statistically significant), and compliance was associated with employment in all models. The estimates for compliance are particularly large: higher compliance as children was associated with an increased employment rate of 11.6 to 13.1 percentage points. This inconsistent result might be related to differences between the two studies. Another possibility is inconsistencies due to the use of a measure of employment status that is crude (i.e., employed vs. non-employed) and limited (i.e., only formal employment in Wisconsin), which calls for future research using more detailed measures of

employment/occupation status (e.g., use of industry and occupation coding) or other forms of data (e.g., survey reports).

These results are an important addition to the literature centered around the short-term effects of the child support policy on a child's well-being (Baughman, 2017; Hakovirta et al., 2020; Lewis & Kornrich, 2020). Prior studies have shown several benefits of receiving child support, including an increase in the custodial family's financial resources and an improvement in the child's health and other behavioral and educational outcomes (Berger & Font, 2015; Nepomnyaschy et al., 2012; Nepomnyaschy et al., 2014; Sorensen, 2016). The current study provides evidence that the income provided by child support not only contributes to children's current resources but may also contribute to greater economic resources as young adults, mainly in terms of earning levels and employment opportunities.

On the other hand, there is less consistent evidence of results for our remaining hypotheses, examining SNAP participation, the amount of SNAP benefits, and having a child support case as an adult. Study 1 shows some evidence that those in the full-support group were less likely to receive benefits and received lower amounts, but these were not consistent across samples. In Study 2, only one of the sixteen models for SNAP use or benefit amounts is statistically significant. We find no relationship between child support as a child and having an open child support case as an adult in our base results. These (mostly) null results call for future research to identify childhood and life course factors (e.g., social support availability, family networks) predicting future welfare involvement or marital/relational instability. Particularly, as prior studies have shown that child poverty or growing up in a single-parent household may increase the likelihood of welfare involvement in adulthood (Huang et al., 2002; 2004), further

research is needed to examine under what conditions or context child support intervenes in such long-term association.

In comparing the results of studies 1 and 2, we found two notable differences. First, in terms of the long-term effect of child support receipt on earnings levels, there was a substantial difference in the magnitude of its impact. Specifically, in Study 1, children in the full child support group had about $500 per year higher earnings than those in the partial support group. In Study 2, receiving child support as a child was associated with an increase in earnings as an adult of between $4,153 and $7143 per year. Another difference between the two studies was that, in Study 1 there were some noted group differences in SNAP use, whereas in Study 2 receipt of child support as a child was not associated with SNAP use as an adult. These differences may arise from sample differences; Study 1 relied on data from welfare recipients, whereas Study 2 relied on data from single parents of all economic statuses. Regarding the difference in the magnitude of the earning impacts, one possibility is that the children of welfare participants face a variety of disadvantages in the labor market, so that receiving child support may not have as substantial an impact as it does for children whose parents did not receive welfare assistance. Similarly, perhaps the children of welfare participants who receive child support as a child have less SNAP use as an adult. Another possibility is that the PSM model in Study 2 is not able to fully control for differences between the groups, whereas the random assignment analysis (Study 1) is able to control for unobserved differences. Third, Study 1 differentiates groups by what was a fairly small difference. One group received partial support, and the other group full support, but the distinction mattered only during periods of welfare receipt; when parents moved off of welfare, parents in both groups received the full amount. If there had been more contrast between the two groups, the effects may have been larger.

Overall, the results of the current study support the intergenerational transmission of economic status that asserts an economic association between parents and their adult children (Becker & Tomes, 1979; 1986; Harper et al., 2003; Blanden et al., 2014). More importantly, this study offers evidence that child support may serve as a mechanism for mitigating the persistence of economic disadvantage associated with the parent's single parenthood in a way that increases the child's earnings and employment opportunities as an adult. McLanahan (2004) asserted that a change in family structure diminishes the pool of parental resources and ultimately widens a gap in later life outcomes between adults raised in two-parent families versus those who did not. Our results suggest that child support may alleviate such a gap in the long run, further supporting the legitimacy of the child support policy.

The supplementary analyses that examined long-term effects of child support receipt by a child's age do not show expected results. Established literature suggests that parental separation or divorce can influence the well-being of children, and such effects can differ by a child's age (Garriga, & Pennoni, 2020; Kalter & Rembar, 1981). Moreover, prior studies suggest that family income during early childhood has a more significant impact on children's development, specifically cognitive outcomes, than family income during later childhood (Duncan, et al., 2015; Harkness et al., 2020). Securing more financial resources through child support payments may contribute to a child's development during the critical early period, and such benefits may persist until early adulthood. However, we generally find no difference between child support received as a young child (aged 0–5) and that received as an older child (aged 6–16).

The current study has limitations. First, children who were likely to be out of state were regarded as having zero earnings, no employment, no SNAP records, and no child support case. Although we offered the result of the sensitivity analysis that re-estimated the models excluding

such cases, we note that this issue might have affected the findings of this study. Namely, if these out-of-state children have been disproportionately assigned in one of the two groups and have more false zeros in either group, any observed differences between the groups might have been under- or overestimated. Relatedly, we cannot rule out potential unmeasured confounders that may have affected the results. For example, receipt of child support may indicate a greater involvement from the non-custodial parent (Carlson & Magnuson, 2011), which could positively affect the overall development of children and thus improve economic prospects as young adults. Despite its advantages, the limited capacity of PSM matching should be noted. While we can use PSM to balance observed covariates, unmeasured confounders potentially remain unaccounted for, and their exclusion may bias results. For instance, the exclusion of features such as mother and father education or employment (as a function of data quality) that are known to influence child support payment and compliance may lead to different conclusions regarding the magnitude of the relationship between child support receipt or compliance and adult outcomes. PSM methods are commonly implemented in the literature, and many authors do not sufficiently document the balancing diagnostics or other hyperparameters (e.g., radius values, caliper values) associated with final models and results (Yao et al., 2017). As such, PSM and the statistical procedures underlying the technique are often considered to be a sort of "black box." In the present study, we implement several algorithms to ensure the robustness of our results and report relevant balancing diagnostics as a proactive step to address this perceived limitation. Elsewhere researchers highlight the strengths and weakness of various PSM algorithms that readers may find useful (see Austin 2014; Caliendo, & Kopeinig, 2008). Additionally, the data for the study were gathered in a single state, Wisconsin, so it may not be generalizable to those in other states. Moreover, the data for Study 2 were drawn from 21 (of 72) counties, so they did not cover the

whole state. In addition, the study sample was limited to children with custodial mothers, which may not represent the current composition of child support cases that includes a significant portion of cases where both parents share placement and a smaller share of custodial fathers (Meyer et al., 2017). In addition to potential limitations on generalizability, the five outcome variables were based on the data measured in 2019; combining data from multiple years may offer more robust results. Lastly, the use of Wisconsin administrative data was limited in terms of the availability of variables, especially about a child's characteristics or other psychological or health outcomes. Relatedly, the current study did not incorporate the non-financial contributions of the non-custodial parent to predict long-term effects, which warrants future research.

Despite such limitations, the key contribution of the current study is to begin to fill the knowledge gap in the literature by demonstrating that receiving child support as a child may have a long-term association with higher earnings as an adult than those who did not receive child support or received very little. Receipt of child support increases financial resources available for children and may enhance their earnings potential as young adults. Future research can further explore the long-term effect of child support receipt on other aspects of adult well-being, such as relational/marital stability or health outcomes.

Our findings also offer implications for policy. First, our findings can be seen as evidence for encouraging orders at an appropriate level, even for noncustodial parents facing barriers. In Study 2, adult earnings are more related to compliance (the proportion of the order that was paid) than they are to whether child support was received. This may reflect differences in the cutoffs and comparisons; the higher compliance group is relatively smaller than the child support payment group. Alternatively, compliance may be particularly important, suggesting the potential that "right-sizing" orders may be particularly important: lowering the amount owed

may mean that compliance is higher (e.g., Hodges et al., 2020), which could then have consequential long-term results. Second, our findings suggest the importance of payments. Child support services are cost-effective when judged by the return on expenditures, collecting over five dollars for every dollar spent on enforcement in 2019 (Congressional Research Service, 2021). Concerns have been raised that excessive enforcement can be counterproductive, may damage family relationships, and discourage, especially low-income fathers, from formal employment (Hahn et al., 2018; Cancian et al., 2013). On the other hand, child support often provides critical economic support to otherwise financially vulnerable families. And our results indicate that the returns may be even greater than typically estimated, given the long-term impacts. Child support may disrupt patterns of intergenerational disadvantage, reducing the economic vulnerability of children living with single mothers, and improving those children's earnings as adults.

Our results do not directly address the impact of other income support. Child support may have differential impacts than, for example, public benefits. But the finding that relatively modest increases in child support receipt as a child increase earnings as an adult suggests the importance of considering the full array of potential benefits of other investments in families with children. COVID economic-relief cash benefits and the expansion of the Child Tax Credit, for example, substantially reduced economic vulnerability and child poverty (U.S. Census Bureau, 2021a; 2021b). To the extent that reducing economic hardship for children also supports better outcomes for them as adults, the returns to those investments are that much greater.

REFERENCES

Aaronson, D., & Mazumder, B. (2008). Intergenerational economic mobility in the United States, 1940 to 2000. *Journal of Human Resources*, *43*(1), 139–72. https://doi.org/10.3368/jhr.43.1.139

Amato, P. R. (1996). Explaining the intergenerational transmission of divorce. *Journal of Marriage and the Family*, *58*(3), 628–640. https://doi.org/10.2307/353723

Austin, P. C. (2011). An introduction to propensity score methods for reducing the effects of confounding in observational studies. *Multivariate Behavioral Research*, *46*(3), 399–424. https://doi.org/10.1080/00273171.2011.568786

Austin, P. C. (2014). A comparison of 12 algorithms for matching on the propensity score. *Statistics in Medicine*, *33*(6), 1057–1069.

Bartfeld, J. (2000). Child support and the post-divorce economic well-being of mothers, fathers, and children. *Demography*, *37*(2), 203–213.

Baughman, R. A. (2017). The impact of child support on child health. *Review of Economics of the Household*, *15*(1), 69–91.

Becker, G. S., & N. Tomes (1979). An equilibrium theory of the distribution of income and intergenerational mobility. *Journal of Political Economy*, *87*(6), 1153–89.

Becker, G. S., & N. Tomes (1986). Human capital and the rise and fall of families. *Journal of Labor Economics*, *4*(3), S1–39.

Berger, E., Jamshidi, N., Reupert, A., Jobson, L., & Miko, A. (2021). Review: The mental health implications for children and adolescents impacted by infectious outbreaks – A systematic review. *Child and Adolescent Mental Health*, *26*(2), 157–166. https://doi.org/10.1111/camh.12453

Berger, L. M., & Font, S. A. (2015). The role of the family and family-centered programs and policies. *The Future of Children*, *25*(1), 155–176.

Bird, K. (2007) The intergenerational transmission of poverty: An overview. Working Paper 99. Manchester: IDPM/Chronic Poverty Research Centre (CPRC). Available at: www.chronicpoverty.org/resources/cp99.htm.

Black, S. E., & Devereux, P. J. (2011). Recent developments in intergenerational mobility. In O. Ashenfelter, & D. Card (Eds.), *Handbook of Labor Economics. Vol. 4B* (pp. 1487–1541). North Holland: Amsterdam, The Netherlands.

Blanden, J., Haveman, R., Smeeding, T., & Wilson, K. (2014). Intergenerational mobility in the United States and Great Britain: A comparative study of parent–child pathways. *Review of Income and Wealth*, *60*(3), 425–449.

Bloom, H.S. (2006). The core analytics of randomized experiments for social research. MDRC Working Papers on Research Methodology. New York: MDRC.

Bloome, D. (2017). Childhood family structure and intergenerational income mobility in the United States. *Demography, 54*, 541–569. https://doi.org/10.1007/s13524-017-0564-4

Caliendo, M., & Kopeinig, S. (2008). Some practical guidance for the implementation of propensity score matching. *Journal of Economic Surveys*, *22*(1), 31–72. https://doi.org/10.1111/j.1467-6419.2007.00527.x

Cancian, M., & D. Reed (2009). Changes in family structure, childbearing, and employment: Implications for the level and trend in poverty. In M. Cancian and S. Danziger (Eds.), *Changing Poverty, Changing Policies* (pp. 92–121). New York: Russell Sage Foundation.

Cancian, M., & Meyer, D. R. (2018). Reforming policy for single-parent families to reduce child poverty. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, *4*(2), 91–112.

Cancian, M., & Meyer, D.R. (2005). Child support in the United States: An uncertain and irregular income source? Discussion Paper No. 1298-05. Institute for Research on Poverty.

Cancian, M., Heinrich, C., & Chung, Y. (2013). Discouraging disadvantaged fathers' employment: An unintended consequence of policies designed to support families. *Journal of Policy Analysis and Management*, *32*(4), 758–784.

Cancian, M., Meyer, D. R., & Caspar, E. (2008). Welfare and child support: Complements, not substitutes. *Journal of Policy Analysis and Management*, *27*(2), 354–375.

Carlson, M. J., & Magnuson, K. A. (2011). Low-income men and fathers' influences on children? *The Annals of the American Academy of Political and Social Science*, *635*(1), 95–116. https://doi.org/10.1177/0002716210393853

Carr, M. D., & Wiemers, E. E. (2016). *The decline in lifetime earnings mobility in the U.S.: Evidence from survey-linked administrative data*. Washington, D.C: Washington Center for Equitable Growth.

Chetty, R., Hendren, N., Jones, M. R., & Porter, S. R. (2020). Race and economic opportunity in the United States: An intergenerational perspective. *The Quarterly Journal of Economics*, *135*(2), 711–83.

Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014). Where is the land of opportunity? The geography of intergenerational mobility in the United States. *The Quarterly Journal of Economics*, *129*(4), 1553–1623.

Congressional Research Service. 2021. The child support enforcement (CSE) program. Retrieved from:

https://crsreports.congress.gov/product/pdf/IF/IF10113#:~:text=In%20FY2019%2C%20combined%20federal%20and,allowable%20expenditures%20on%20CSE%20activities.

Cuesta, L., & Meyer, D. R. (2014). The role of child support in the economic wellbeing of custodial-mother families in less developed countries: The case of Colombia. *International Journal of Law, Policy and the Family*, *28*(1), 60–76.

D'Onofrio, B.M., Turkheimer, E., Emery, R.E., Harden, K.P., Slutske, W.S., Heath, A.C., Madden, P.A., & Martin, N.G. (2007). A genetically informed study of the intergenerational transmission of marital instability. *Journal of Marriage and the Family*, *69*(3), 793–809.

Duncan, G. J., Magnuson, K., & Votruba-Drzal, E. (2015). Children and socioeconomic status. In M. H. Bornstein, T. Leventhal, & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science: Ecological settings and processes* (pp. 534–573). John Wiley & Sons, Inc. https://doi.org/10.1002/9781118963418.childpsy414

Fass, S., Dinan, K. A., & Aratani, Y. (2009). *Child poverty and intergenerational mobility*. National Center for Children in Poverty, Columbia University. https://academiccommons.columbia.edu/doi/10.7916/D89P39CH

Garriga, A., & Pennoni, F. (2020). The causal effects of parental divorce and parental temporary separation on children's cognitive abilities and psychological well-being according to parental relationship quality. *Social Indicators Research*, 1–25.

Grall, T. (2020). *Custodial mothers and fathers and their child support: 2017*. Current Population Reports, P60–269, U.S. Census Bureau, Washington, DC, 2020.

Greene, A. D., & Moore, K. A. (2000). Nonresident father involvement and child well-being among young children in families on welfare. *Marriage & Family Review*, *29*(2/3), 159–180.

Greenwood, J., Guner, N., & Knowles, J. (2003). More on marriage, fertility, and the distribution of income. *International Economic Review*, *44*(3), 827–862.

Guner, N. (2015). Gary Becker's legacy on intergenerational mobility. *Journal of Demographic Economics*, *81*(1), 33–43. doi:10.1017/dem.2014.16

Ha, Y., Cancian, M., & Meyer, D. R. (2012). Child support and income equality. Working Paper, Madison: University of Wisconsin–Madison. https://www.irp.wisc.edu/resource/child-support-and-income-equality/

Hahn, H. Edin, K., & Abrahams, L. (2018). Transforming child support into a family-building system. Urban Institute Research Report. Retrieved from: https://www.urban.org/research/publication/transforming-child-support-family-building-system

Hakovirta, M. (2011). Child maintenance and child poverty: A comparative analysis. *Journal of Poverty and Social Justice*, *19*(3), 249–262

Hakovirta, M., Denuwara, N., Bharathi, S., Topping, P., & Eloranta, J. (2020). The importance of diversity on boards of directors' effectiveness and its impact on innovativeness in the bioeconomy. *Humanities and Social Sciences Communications*, *7*(1), 116. https://doi.org/10.1057/s41599-020-00605-9

Harkness, S., Gregg, P., & Fernández-Salgado, M. (2020). The rise in single-mother families and children's cognitive development: Evidence from three British birth cohorts. *Child Development*, *91*(5), 1762–1785. https://doi.org/10.1111/cdev.13342

Harper, C., Marcus, R., & Moore, K. (2003). Enduring poverty and the conditions of childhood: Lifecourse and intergenerational poverty transmissions. *World Development*, *31*(3), 535–554.

Hodges, L., Meyer, D. R., & Cancian, M. (2020). What happens when the amount of child support due is a burden? Revisiting the relationship between child support orders and child support payments. *Social Service Review*, 94, 2. https://doi.org/10.1086/709279

Huang, C. C., & Han, K. Q. (2012). Child support enforcement in the United States: Has policy made a difference? *Children and Youth Services Review*, *34*(4), 622–627.

Huang, C. C., Garfinkel, I., & Waldfogel, J. (2004). Child support enforcement and welfare caseloads. *The Journal of Human Resources*, *39*(1), 108–134. https://doi.org/10.2307/3559007

Huang, C. C., Kunz, J., & Garfinkel, I. (2002). The effect of child support on welfare exits and re-entries. *Journal of Policy Analysis and Management*, *21*(4), 557–576. http://www.jstor.org/stable/3326010

Kalter, N., & Rembar, J. (1981). The significance of a child's age at the time of parental divorce. *American Journal of Orthopsychiatry*, *51*(1), 85–100. https://doi.org/10.1111/j.1939-0025.1981.tb01351.x

Lee, S., & Seshadri, A. (2019). On the Intergenerational Transmission of Economic Status. *The Journal of Political Economy*, *127*(2), 855–921. https://doi.org/10.1086/700765

Lersch, P. M., Grabka, M. M., Rüß, K., & Schröder, C. (2021). Wealth of children from single-parent families: Low levels and high inequality in Germany. *Journal of European Social Policy*, *31*(5), 565–579. https://doi.org/10.1177/09589287211040412

Lewis, P., & Kornrich, S. (2020). Nonresident fathers' spending on children: Child support payments and housing instability. *Journal of Family Issues*, *41*(9), 470–497.

Lopoo L. M., & DeLeire T. (2014). Family structure and the economic wellbeing of children in youth and adulthood. *Social Science Research*, *43*, 30–44. [PubMed: 24267751]

Martin, M. A. (2006). Family structure and income inequality in families with children: 1976–2000. *Demography*, 43, 421–445.

McLanahan, S. (2004). Diverging destinies: How children are faring under the second demographic transition. *Demography*, *41*, 607–627 https://doi.org/10.1353/dem.2004.0033

McLanahan, S., & Sandefur, G. (1994). *Growing up with a single parent: What hurts, what helps*. Cambridge, MA: Harvard University Press.

Meyer, D. R., & Hu, M. (1999). A note on the antipoverty effectiveness of child support among mother-only families. *The Journal of Human Resources*, *34*(1), 225–234.

Meyer, D. R., Cancian, M., & Cook, S. T. (2017). The growth in shared custody in the United States: Patterns and implications. *Family Court Review*, *55*(4), 500–512. https://doi.org/10.1111/fcre.12300

Meyer, D.R., & Bartfeld, J. (1998). Patterns of child support compliance in Wisconsin. *Journal of Marriage and Family*, *60*(2), 309–18.

Meyer, D.R., Cancian, M., & Waring, M. (2020). Use of Child Support Enforcement Actions and their Relationship to Payments. *Children and Youth Services Review*, *95*, 3. https://doi.org/10.1086/715837

Mikkonen, H. M., Salonen, M. K., Häkkinen, A., Olkkola, M., Pesonen, A. K., Räikkönen, K., Osmond, C., Eriksson, J. G., & Kajantie, E. (2016). The lifelong socioeconomic disadvantage of single-mother background – the Helsinki Birth Cohort study 1934–1944. *BMC public health*, *16*(1), 817. https://doi.org/10.1186/s12889-016-3485-z

Najman, J. M., Bor, W., Ahmadabadi, Z., Williams, G. M., Alati, R., Mamun, A. A., Scott, J. G., & Clavarino, A. M. (2018). The inter- and intra- generational transmission of family poverty and hardship (adversity): A prospective 30-year study. *PloS one*, *13*(1), e0190504. https://doi.org/10.1371/journal.pone.0190504

Nepomnyaschy, L., Magnuson, K., & Berger, L. M. (2012). Child support and young children's development. *The Social Service Review*, *86*(1), 3–35. https://doi.org/10.1086/665668

Nepomnyaschy, L., Miller, D.P., Garasky, S., & Nanda, N. (2014). Nonresident fathers and child food insecurity: Evidence from longitudinal data. *Social Service Review*, *88*(1), 92–133.

Pirog, M. A., & Ziol-Guest, K. M. (2006). Child support enforcement: Programs and policies, impacts and questions. *Journal of Policy Analysis and Management*, *25*(4), 943–990.

Rosenbaum, P. R., & Rubin, D. B. (1983). The central role of the propensity score in observational studies for causal effects. *Biometrika*, *70*(1), 41–55. https://doi.org/10.1093/biomet/70.1.41

Rubin, D. B. (2001). Using propensity scores to help design observational studies: application to the tobacco litigation. *Health Services & Outcomes Research Methodology, 2*, 169–188.

Sariscsany, L., Garfinkel, I., & Nepomnyaschy, L. (2019). Describing and understanding child support trajectories. *Social Service Review, 93*(2), 143–182.

Shrider, E. A., Kollar, M., Chen, F., & Semega, J. (2021). *Income and poverty in the United States: 2020*. Current Population Report P60-273. Washington, DC: U.S. Census Bureau.

Solon, G. (2004). A model of intergenerational mobility variation over time and place. In M. Corak (Ed.), *Generational Income Mobility in North America and Europe* (pp. 38–47). Cambridge: Cambridge University Press. doi:10.1017/CBO9780511492549.003

Sorensen, E. (2016). The child support program is a good investment. Washington, DC: Office of Child Support Enforcement.

Tach, L. (2015). Social mobility in an era of family instability and complexity. *The ANNALS of the American Academy of Political and Social Science*, *657*(1), 83–96. https://doi.org/10.1177/0002716214547854

Tobin, J. (1958). Estimation of relationships for limited dependent variables. *Econometrica: Journal of the Econometric Society*, 24–36. https://doi.org/10.2307/1907382

Troller-Renfree, S. V., Costanzo, M. A., Duncan, G. J., Magnuson, K., Gennetian, L. A., Yoshikawa, H., ... & Noble, K. G. (2022). The impact of a poverty reduction intervention on infant brain activity. *Proceedings of the National Academy of Sciences*, *119*(5) e2115649119. https://doi.org/10.1073/pnas.2115649119

United States Census Bureau. (2021a). The supplemental poverty measure: 2020. Report Number P60-275. Retrieved from: https://www.census.gov/library/publications/2021/demo/p60-275.html#:~:text=Highlights,older%20between%202019%20and%202020.

United States Census Bureau. (2021b). Census Bureau data for childhood poverty and the child tax credit. 2021 Data Summit Series. Retrieved from: https://www.census.gov/data/academy/webinars/2021/data-summit-series/childhood-poverty-and-the-child-tax-credit.html

United States Office of Child Support Enforcement. (June 2019). FY 2018 preliminary data report. Washington, D.C.: HHS/ACF/OCSE. https://www.acf.hhs.gov/sites/default/files/programs/css/fy_2018_preliminary_data_report.pdf.

Van Ryzin, M., Fishbein, D., & Biglan, A. (2018). The promise of prevention science for addressing intergenerational poverty. *Psychology, public policy, and law: an official law review of the University of Arizona College of Law and the University of Miami School of Law*, *24*(1), 128–143. https://doi.org/10.1037/law0000138

Venohr, J.D. (2013). Child support guidelines and guideline reviews: State differences and common issues. *Family Law Quarterly* 47(3), 327–352.

Wagmiller, R.L., & Adelman, R.M. (2009). Childhood and Intergenerational Poverty: The Long-Term Consequences of Growing Up Poor. Working Paper at the National Center for Children in Poverty, Columbia University

Wallace, G. L., Haveman, R. (2007). The implications of differences between employer and worker employment/earnings reports for policy evaluation. *Journal of Policy Analysis and Management, 26*, 737–754.

Western, B., Bloome, D., & Percheski, C. (2008). Inequality among American families with children, 1975–2005. *American Sociological Review, 73*, 903–920.

Whitton, S. W., Rhoades, G. K., Stanley, S. M., & Markman, H. J. (2008). Effects of parental divorce on marital commitment and confidence. *Journal of Family Psychology: Journal of the Division of Family Psychology of the American Psychological Association (Division 43), 22*(5), 789–793. https://doi.org/10.1037/a0012800

Wisconsin Department of Workforce Development. (2019). QCEW Description. WisConomy. Wisconsin Department of Workforce Development, Madison. https://jobcenterofwisconsin.com/wisconomy/pub/qcew_long.

Yao, X. I., Wang, X., Speicher, P. J., Hwang, E. S., Cheng, P., Harpole, D. H., Berry, M. F., Schrag, D., & Pang, H. H. (2017). Reporting and Guidelines in Propensity Score Analysis: A Systematic Review of Cancer and Cancer Surgical Studies. *Journal of the National Cancer Institute, 109*(8), djw323. https://doi.org/10.1093/jnci/djw323

Appendix Table 1. Study 1: Association between Being in the Full Child Support Group during Childhood and Adult Outcomes

	2019 Earnings	2019 SNAP Amount	2019 Employment	2019 Any SNAP Receipt	2019 Kids Case
Full Child Support Group	**$305**	**$-37**	**-0.0055**	**-0.0140**	**-0.0020**
	(337)	**(38)**	**(0.0102)**	**(0.0100)**	**(0.0098)**
Child Age	$406***	$44***	-0.00439***	0.00263^{+}	0.0351***
	(48)	(5)	(0.0014)	(0.0014)	(0.0014)
Child Male	$-2,139***	$-1,369***	-0.118***	-0.263***	-0.177***
	(301)	(35)	(0.00860)	(0.00871)	(0.00912)
Child Race/Ethnicity (relative to white)					
Black	$-1,725***	$148***	-0.0114	0.0805***	0.0393***
	(357)	(40)	(0.0110)	(0.0105)	(0.0104)
Other	-	-	-	-	-
Focal Child's Non-Resident Parent's Earnings Were $15,000 or More (relative to $0–$14,999)	$3,106***	$-164**	0.0387*	-0.0622***	-0.0473**
	(684)	(63)	(0.0167)	(0.0176)	(0.0167)
Mother's Child Support in Last Year (relative to $0)					
$1–$999	$278	$9	0.0191	-0.00604	0.00286
	(406)	(47)	(0.0128)	(0.0124)	(0.0124)
$1,000 or more	$1,246**	$-40	0.0356**	-0.0154	-0.0147
	(454)	(49)	(0.0131)	(0.0127)	(0.0125)
Mother's Age (relative to 25 or younger)					
26–30	$-430	$-59	-0.0257^{+}	-0.0223^{+}	-0.0324*
	(433)	(47)	(0.0137)	(0.0131)	(0.0126)
31 or older	$106	$-58	-0.000235	-0.0183	-0.0496***
	(484)	(52)	(0.0147)	(0.0144)	(0.0141)
Mother's Education (relative to post high school)					
Less than HS	$-1,138^{+}	$419***	0.0295	0.124***	0.0977***
	(636)	(65)	(0.0190)	(0.0180)	(0.0186)
HS Diploma	$687	$184**	0.0406*	0.0605***	0.0327^{+}
	(654)	(63)	(0.0192)	(0.0183)	(0.0187)

	2019 Earnings	2019 SNAP Amount	2019 Employment	2019 Any SNAP Receipt	2019 Kids Case
Mother's Employment in Previous 8 Quarters (relative to 0 quarters)					
1–4 Quarters	$-698	$89+	0.0148	0.0298*	0.0312*
	(484)	(52)	(0.0145)	(0.0141)	(0.0138)
5–8 Quarters	$511	$48	0.0215	0.0136	0.0395**
	(539)	(57)	(0.0160)	(0.0154)	(0.0150)
Number of Legal Fathers in Mother's Family (relative to 0)					
One	$-1,353	$-21	-0.0328	-0.0469	-0.0134
	(1,246)	(100)	(0.0420)	(0.0424)	(0.0456)
Two or More	$-1,401	$50	-0.0143	-0.0181	0.0162
	(1,267)	(105)	(0.0427)	(0.0431)	(0.0463)
Number of Children (relative to one)					
Two	$334	$162**	-0.0236	0.0218	0.0346*
	(547)	(51)	(0.0167)	(0.0165)	(0.0165)
Three or More	$-841	$233***	-0.0525**	0.0314+	0.0675***
	(561)	(53)	(0.0172)	(0.0167)	(0.0170)
Observations	17,923	17,923	17,923	17,923	16,989

Notes: Models also control for initial assignment, Initial W-2 Tier, AFDC Use in Prior 24 months, and County. For earnings and SNAP amounts, ordinary least squares regressions are used; for the other outcomes, we use probit models and show marginal effects. Parenthetical values display robust standard errors. + p<.10 * p<.05 ** p<.01 *** p<.001

Appendix Table 2. Study 2: Standardized Mean Difference (SMD) and Variance Ratio for Payment Model

	Standardized Mean Difference Raw Data	Standardized Mean Difference Matched Data	Variance Ratio Raw Data	Variance Ratio Matched Data
Child Male	-0.04	-0.04	1.00	1.00
Child Age	0.65	-0.17	1.19	0.75
Father Earnings	0.92	0.23	3.19	1.46
Mother Earnings	0.79	-0.25	2.46	0.40
Marriage Date (days since Jan 1st, 1960)	-0.14	0.12	2.12	0.87
Father Age at Petition	0.64	-0.04	0.67	0.83
Mother Age at Petition	0.85	-0.06	0.95	0.88
Child Support Owed	0.91	-0.20	2.14	0.39
Father Race				
White	0.27	-0.06	1.00	1.02
Black	-0.83	0.05	0.19	1.25
Other	-0.33	-0.15	0.26	0.49
Mother Race				
White	0.24	-0.05	0.89	1.04
Black	-0.67	0.10	0.26	1.57
Other	-0.27	0.02	0.33	1.13
Child Race				
White	0.48	-0.03	0.88	1.03
Black	-0.68	0.05	0.22	1.26
Other	-0.42	0.01	0.29	1.05
Father Born US				
No	0.19	-0.05	1.25	0.95
Yes	-0.66	0.00	1.14	1.00
Father Born WI				
No	-0.14	-0.04	0.94	0.98
Yes	-	-	-	-
Mother Born US				
No	0.44	0.03	1.76	1.02
Yes	-0.82	-0.01	1.57	1.00
Mother Born WI				
No	0.13	0.03	1.06	1.01
Yes	-	-	-	-
Child Born US				
No	0.37	0.05	2.48	1.10
Yes	-0.64	-0.03	2.25	1.02
Child Born WI				
No	0.20	0.06	1.37	1.08
Yes	-	-	-	-

	Standardized Mean Difference Raw Data	Standardized Mean Difference Matched Data	Variance Ratio Raw Data	Variance Ratio Matched Data
Father Number of Marriages				
None	-	-	-	-
One or More	0.93	-0.13	0.90	1.17
Mother Number of Marriages				
None	-	-	-	-
One or More	0.86	-0.05	0.76	1.07
Father Marital Status				
Never Married or Divorced/ Separated/Widowed	-0.25	0.01	0.35	1.08
Married	-0.23	0.02	0.22	1.18
Mother Marital Status				
Never Married or Divorced/ Separated/Widowed	-0.72	0.05	0.23	1.26
Married	-0.25	0.03	0.24	1.25
Father Legal Representation				
Yes	0.66	0.10	1.57	1.01
No	-0.64	-0.08	1.44	1.00
Mother Legal Representation				
Yes	0.27	0.13	0.75	0.86
No	-0.27	-0.12	0.73	0.85
County Rural/Urban				
Rural	0.16	-0.20	1.13	0.92
Urban	0.28	0.33	1.16	1.21

Note: The standardized mean difference (SMD) and variance ratios were calculated for the sample before and after PSM. SMDs less than .25 and variance ratios ranging from .5 to 2 indicate satisfactory balance (Rubin, 2001); Mother earnings, child support owed, father race: other, and Urbanicity slightly exceed these recommended thresholds.

Appendix Table 3. Study 2: Standardized Mean Difference (SMD) and Variance Ratio for Compliance Model

	Standardized Mean Difference Raw Data	Standardized Mean Difference Matched Data	Variance Ratio Raw Data	Variance Ratio Matched Data
Child Male	0.03	-0.05	1.00	1.00
Child Age	0.58	-0.03	0.98	0.86
Father Earnings	0.87	0.08	3.29	1.62
Mother Earnings	0.57	-0.15	1.69	0.58
Marriage Date (days since Jan 1st, 1960)	-0.19	0.12	1.73	0.85
Father Age at Petition	0.62	-0.06	0.64	0.82
Mother Age at Petition	0.80	-0.11	0.75	0.74
Father Race				
White	0.09	-0.14	0.99	1.05
Black	-0.75	-0.02	0.10	0.85
Other	-0.25	-0.12	0.32	0.53
Mother Race				
White	0.18	-0.04	0.90	1.04
Black	-0.62	0.06	0.17	1.47
Other	-0.29	0.05	0.23	1.59
Child Race				
White	0.35	0.00	0.86	1.00
Black	-0.63	-0.01	0.13	0.95
Other	-0.36	0.01	0.29	1.04
Father Born US				
No	0.21	-0.24	1.26	0.87
Yes	-0.70	0.09	0.96	1.08
Father Born WI				
No	-0.10	-0.20	0.95	0.92
Yes	-	-	-	-
Mother Born US				
No	0.43	-0.04	1.56	0.98
Yes	-0.77	0.06	1.18	1.03
Mother Born WI				
No	0.11	-0.03	1.05	0.99
Yes	-	-	-	-
Child Born US				
No	0.38	-0.04	2.20	0.95
Yes	-0.59	0.04	1.70	0.99
Child Born WI				
No	0.22	-0.04	1.39	0.95
Yes	-	-	-	-

	Standardized Mean Difference Raw Data	Standardized Mean Difference Matched Data	Variance Ratio Raw Data	Variance Ratio Matched Data
Father Number of Marriages				
None	-	-	-	-
One or More	0.78	-0.07	0.70	1.10
Mother Number of Marriages				
None	-	-	-	-
One or More	0.77	0.10	0.60	0.86
Father Marital Status				
Never Married or Divorced/ Separated/Widowed	-0.29	0.04	0.23	1.40
Married	-0.20	-0.08	0.23	0.50
Mother Marital Status				
Never Married or Divorced/ Separated/Widowed	-0.69	0.02	0.12	1.14
Married	-0.18	-0.02	0.35	0.88
Father Legal Representation				
Yes	0.64	0.08	1.29	0.99
No	-0.65	-0.07	1.21	0.98
Mother Legal Representation				
Yes	0.25	0.09	0.74	0.88
No	-0.28	-0.09	0.69	0.87
County Rural/Urban				
Rural	0.11	-0.01	1.09	0.99
Urban	0.17	-0.04	1.08	0.99

Note: The standardized mean difference (SMD) and variance ratios were calculated for the sample before and after PSM. SMDs less than .25 and variance ratios ranging from .5 to 2 indicate satisfactory balance (Rubin, 2001).

Appendix Table 4. Study 2: Association between Child Support during Childhood and Adult Outcomes, Wisconsin Residents Only

Outcomes	Nearest Neighbor Payment Model	Nearest Neighbor Compliance Model
2019 Earnings	$9,879***	$8,333**
	(2,193)	(2,797)
2019 Employment	.0525	.0554
	(.0819)	(.0456)
2019 SNAP Amount	$-504*	$-24
	(230)	(96)
2019 Any SNAP	-.1974**	-.0156
	(.0753)	(.0327)
Child Support Case	-.1036**	-.0554
	(.0363)	(.0551)
Observations	1,076	1,076

Notes: For earnings and SNAP amounts, ordinary least squares regressions are used; for the other outcomes, we use probit models and show marginal effects. Parenthetical values display standard errors.

+ p<.10 * p<.05 ** p<.01 *** p<.001