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The Relationship between Substance Use Patterns and Economic and Health Outcomes among Low-income Caregivers and Children

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Abstract

Objective—This study estimates how patterns of substance use relate to work status, public program use, and well-being among a sample of female caregivers and children.

Methods—We assessed work, public program use, and well-being measures during the period 2000–2001 as a function of substance use patterns among 1623 female caregivers of children aged 0–4 and 10–14 during baseline assessment (1999) in the Welfare of Children and Families study in low-income neighborhoods in Boston, Chicago, and San Antonio.

Results—Among caregivers who reduced substance use from heavy to no or light use, work, receipt of income assistance, mental health symptoms, and reports of child behavior problems were not significantly different from those for caregivers with no/light substance use in both interviews. Caregivers with increased/heavy substance use were least likely to work, more likely to be detached from work and public income assistance, and had worse mental health symptoms and reported more behavior problems among the children they cared for, compared with light/non-substance using caregivers.

Conclusions—Caregivers with increased substance use fared poorly on measures of well-being and work relative to others. Policies that promote, rather than impede reductions in substance use, are more likely to promote self-sufficiency and well-being.

Treatment outcome studies have demonstrated the efficacy of pharmacologic and behavioral interventions to reduce drug and alcohol use in heterogeneous populations (1-5), and the effect of treatment on a number of psychosocial outcomes including employment has also been demonstrated (3). Substance abuse treatment has been shown to have equal or better outcomes for women when compared with men (6), but barriers to women's treatment entry and retention have been noted (6), including: child care needs (7), lack of insurance (8), less employment (9), and other economic barriers (10). Although the adverse effects of substance abuse on work outcomes have been documented (11,12), evidence on work outcomes following treatment yields mixed results (13,14). Furthermore, studies often use predominantly male samples (15). Women remain at lower likelihood to enter substance abuse treatment than men in the course of the lifetime (5), in spite of evidence that such treatment benefits them and any dependent children in their care (16).

Among low-income women, demonstration projects report that long-term residential substance abuse services may not only decrease substance use, but may also reduce reliance on public health and income programs and improve other areas of functioning including parenting attitudes and employment (17,18). Nevertheless, there remains a lack of information on the complex interactions among substance use, employment, and self-sufficiency (measured as the absence of reliance on public income programs) among low-income women who are also more likely than their male counterparts to be primary caregivers for children (19). Such information is critical to a range of social and health care policies that affect the well-being of caregivers and their children, particularly during periods of ongoing reforms to welfare, or Temporary Assistance to Needy Families (TANF).

Using survey data on low-income female caregivers, this prospective study asks: How do patterns of substance use relate to work status, public program use, and well being? More specifically, we test two hypotheses: 1) caregivers with increasing substance use, or moderate to heavy substance use at baseline and follow-up interviews are less likely to work and more likely to participate in public income assistance or health insurance programs than other caregivers, and 2) measures of mental well-being for caregivers and children are worse when caregivers report increasing substance use or moderate to heavy substance use at baseline and follow-up interviews. We test secondary hypotheses that caregivers who reduce substance use between baseline and follow-up interviews have outcomes that do not differ from those of caregivers reporting light/no substance use.

Methods

Conceptual framework

Like others who have studied the impact of substance use on economic outcomes, we draw on the theoretical framework proposed by Becker (20) and applied to health by Grossman (21). The key insight of these models is that individual utility is influenced by health, both directly and indirectly. Health influences utility indirectly because it contributes to productivity both at work, in the form of wages, and at home, by affecting the ability to raise children, for example. In the present context, heavy substance use can be viewed as one dimension of health, and as a (negative) input to physical and mental health, and thus productivity. Such a model predicts that heavy substance use would lower the probability of work relative to public assistance or other options, worsen symptoms of mental health, and contribute to poor child behavior. Testing for such relationships is challenging because substance use and outcomes of interest may relate to some common factor other than substance use. To help address this confounding, we estimate how changes in outcomes relate to changes in substance use, although we acknowledge the possibility that confounding factors could change substance use and our outcomes of interest simultaneously.

Overall Design

To assess how patterns of substance use relate to economic outcomes and well-being among low-income female caregivers and children, we estimate two sets of models using data from interviews at baseline and follow-up at 11–26 months (average=16 months). We first model, at the time of follow-up, the likelihood of working, collecting income assistance (welfare or disability benefits), or neither working nor collecting income assistance (being detached) as a function of changes in substance use. Because we will control for baseline work and income assistance, these models can be viewed as models of changes in work and public assistance. Second, we model several measures of well-being: changes in caregiver mental health symptoms, changes in child behavior as reported by the caregiver, and changes in health insurance status of caregivers as a function of changes in substance use. Together, these

analyses provide a picture of how substance use patterns and policy levers might influence work, public program use, and selected measures of well-being.

Description of data and sample

We use longitudinal data from the first two waves of the Welfare of Children and Families, or 3-Cities study, describing circumstances of low-income female caregivers living under 200 percent of the federal poverty level in low- and moderate-income neighborhoods in Boston, Chicago and San Antonio (22). In March through December 1999, 2,402 “focal” children aged 0–4 or 10–14 and their primary female caregivers were sampled. Information on work status, public program participation, mental health, and substance use of caregivers, as well as child behavior, caregiver demographics and household structure were gathered through in-person interviews with caregivers conducted via a computerized instrument. The sample targeted children aged 0–4 or 10–14 because they mark major transitions for children, and for children living with female caregivers who work, they represent a time when, 1) pre-school aged children “require high quality child care,” and 2) older children “require more intense supervision and scholastic guidance” (22). The survey over-sampled blacks and Hispanics. Second wave interviews were conducted with the same caregivers between September 2000 and June 2001.

Of the 2,402 women interviewed in 1999, 384 women not interviewed in wave 2 were excluded. There were no significant differences in moderate substance use, use of marijuana or other illicit drugs, and the probability of working at wave 1 between attriters and others. We further excluded 348 caregivers because they (n=152) or someone in their household (n=196) received Supplemental Security Income (SSI) in wave 1, but caregivers remain in the sample regardless of SSI receipt in wave 2. This allows us to focus on transitions into SSI, which provides income assistance for poor long-term disabled individuals. Once on SSI, recipients typically do not transition out of it, since terminations of SSI cases are rare. To focus on working-age caregivers, we excluded an additional 40 women who were younger than 18 or older than 64. We excluded 7 women missing information on race, BSI, TANF, or work status, leaving 1623 women.

Substance Use Patterns

Caregivers reported their substance use in the past 12 months. An ideal measure of substance use would capture symptoms of abuse and dependence, and/or both frequency and quantity of substance use, which were not available in the 3-Cities study. However, several studies demonstrate significant correlation between even relatively crude measures of substance use with measures of treatment need, abuse, and/or dependence (23-25), something we confirmed among women aged 18 and older in the 2002 National Survey of Drug Use and Health. Use measures (based on either 1+ occasion of 5+ drinks at a sitting or use of any illicit drug in past 30 days) were significantly correlated with having either abuse or dependence ($\rho = .37, p < .01$).

We categorized substance use patterns in two steps. Respondents were asked, “In the last 12 months, how often were you drunk?” Women were also asked, separately for marijuana and other illicit substances, “In the last 12 months, how often did you use _____?” Possible responses to all three questions included “never”, “once or twice”, “several times”, or “often”. In the first step, for each wave, we categorized a respondent's use as “light/no use” if respondents answered “never” or “once or twice” to all three questions (i.e., frequency of drunkenness, marijuana use, and illicit substance use). Otherwise, use was categorized as “moderate/heavy.” We distinguish moderate/heavy use of alcohol and drugs from any use because previous research suggests that moderate to heavy substance use is most likely to coincide with substance-related harm and to reduce the probability of work and earnings (12, 26,27).

In the second step, we created four patterns of substance use based on wave 1 and wave 2 use: a) Light or non-use in both waves (n=1377); b) Moderate/heavy use in both waves (n=56); c) Increased use, or light/non-use in wave 1 and moderate/heavy use in wave 2 (n=99); and d) Reduced use, or moderate/heavy use in wave 1 and light/non use in wave 2 (n=91). Given the small size of category b, and the fact that women in both categories b and c were expected to have worse trends in outcomes, we combined b and c into “increased use” to improve precision.

Outcome Measures

We first assessed work and public program participation outcomes, measuring wave 2 outcomes rather than wave 1 to prevent the possibility of reverse causation, or that a change in work or public program use “caused” women to change their substance use. We examined caregivers' wave 2 likelihood of being in one of three mutually exclusive categories: working now with or without TANF or SSI; TANF or SSI without working now; or none of the above (being “detached” from work, TANF, and SSI). Among this sample of predominantly unmarried, low-income female caregivers, we interpret the “detached” state as unfavorable since it likely indicates a lack of resources.

Because Medicaid coverage and health insurance more generally offer important avenues to access substance abuse treatment services, we assess health insurance status for sample women. We use caregiver reports of Medicaid coverage in wave 2, and among caregivers with(without) health insurance at baseline, whether caregivers lost(gained) health insurance coverage from any source between waves.

We analyzed two measures of mental well-being, caregiver mental health symptoms, and child behavior problems reported by the caregiver. An increasing number of studies suggesting that maternal mental health in general, and maternal substance use in particular, negatively influence a range of child outcomes (28,29). To assess caregiver mental health, we use the Brief Symptom Inventory, or BSI (30), in which female caregivers responded to 18 items relating to anxiety, depression, and somatization. These items were converted into an overall measure of poor mental health, with higher values indicating more symptoms. This measure is highly correlated with the existence of a diagnosable mental health disorder (30,31). We created a binary measure of improved mental health, a one standard deviation decrease in the log-transformed BSI total mental health measure between waves. While this measure has not been used previously, the cutoff for poor mental health indicative of a likely diagnosis of a mental disorder is one standard deviation above the mean (20). Thus, if everyone in our sample had a one-standard deviation decline in BSI used in our analyses, the share of women exceeding the cutoff for poor mental health would fall from 7.6 percent to 0 percent (wave 1). A one standard-deviation rise in BSI scores for our sample would result in 37 percent exceeding the poor mental health cutoff.

To measure child behavior problems, we used caregiver responses to the multi-item Child Behavior Check List (CBCL) for children aged 2–3, and a separate CBCL for children aged 4–18 (32,33), excluding 393 children under age 2 at baseline (n=1230). Similar to the BSI measure, higher scores indicate worse child behavior (32,33), and we formed a variable equal to one if the focal child's CBCL fell by one standard deviation between waves.

Analyses

We estimated two types of outcome models. First, to estimate the effect of substance use patterns on either 1) working; 2) receiving income assistance, TANF or SSI; or 3) being detached, defined as neither working nor receiving income assistance, in wave 2, we estimated multinomial logit models of this three-category variable as a function of indicators for reduced substance use and increased substance use rendering light/non-use in both waves as the

reference category. Each model controlled for education, marital status, race, ethnicity, city, age of respondent in wave 2, and wave 1 work and use of TANF, specified as in Table 1. In a second set of models of health insurance coverage, BSI improvement, or improvements in the CBCL, we estimated logistic regression models with the same controls as above.

For each result, we display the adjusted probability of the outcome, or the average marginal effect of substance use patterns based on the model coefficients. Given relatively modest sample sizes of caregivers who change substance use patterns, we report results with borderline statistical significance, or p-values under .10. For each model, we report the full set of Odds Ratios (logit models) or Relative Risk Ratios (multinomial logit models) in the Appendix. Analyses were conducted using Stata software (version 9.0). All estimates used sample weights provided in the 3-Cities data to make estimates representative of the target population of low-income caregivers and children in low-income neighborhoods in Boston, Chicago, and San Antonio. As recommended by study investigators to prevent results from being skewed towards a single city, weights were scaled such that each city counts equally towards estimates. The Harvard Medical School Human Subjects committee deemed this study exempt from Institutional Review.

Results

The caregivers in the 3-cities sample have widely varied backgrounds and experiences. At baseline, over one third were high school dropouts, the modal living arrangement was unmarried and without a cohabiting partner, less than half were working, and 69 percent were Medicaid enrollees (Table 1). Between waves, over 10 percent lost health insurance coverage, and 14 percent gained insurance coverage. Between waves, 13 percent of caregivers experienced a substantial worsening of the BSI measure, but 16 percent had improved BSI. About 12 percent reported moderate to heavy substance use in at least one wave, with 88 percent reporting light or no drug use in either wave.

Table 2 reveals how work and use of TANF or SSI vary by substance use. Women with reduced substance use resembled women with light/no substance use. The “reducers” used income assistance, and reported working at the wave 2 survey at rates that did not differ significantly from women with light/no use. In contrast, caregivers with increased substance use were significantly more likely to be detached relative to the light/non-users (30 percent v. 21 percent, $p=.051$), and used TANF or SSI more compared with light/non-users (26 percent v. 19 percent, $p=.108$). Table 3 illustrates a surprising finding that while women who reduced their substance use did not differ significantly from non/light users in their rates of using aid or being detached, they face an increased likelihood of losing health insurance relative to light/non-users. Women who reduced substance use faced a 38 percent chance of losing health insurance, compared with a 16 percent chance for light/non-users ($p=.008$). Given the chronic, relapsing nature of substance use disorders, these health insurance findings are alarming. Also of concern, though less surprising, women with “increased use” were less likely to gain insurance coverage between waves compared to light/non-users (34 v. 63 percent, $p=.020$).

The well-being measures of caregivers and children changed as expected (Table 4). Among caregivers who reduced substance use, BSI scores improved for 28 percent, compared to 15 percent among light/non-users, and this difference was borderline significant ($p=.070$). Similarly, 27 percent of “focal” children living with caregivers who reduced substance use experienced improvements in the CBCL, compared with 22 percent of focal children living with light/non-users. This difference was not statistically significant ($p=.64$) but highlights that children cared for by women who reduced substance use had outcomes that compared favorably to women reporting no/light substance use at both interviews. Compared to light/non-users, women with increasing/heavy substance use were significantly less likely to experience BSI

improvements (6.1 percent, $p=.046$), and their children likewise had low rates of improvement in child behavior (3.7 percent, $p<.001$).

Discussion

Among low income women caring for children in Boston, Chicago, and San Antonio between 1999 and 2001, women with increased substance use, or moderate to heavy substance use in both waves, were least likely to achieve self-sufficiency goals such as working or exiting public programs. In contrast, women who began the period as moderate to heavy substance users, but reduced substance use by the second interview had rates of working and public program use that mirrored women with light or no substance use in both interviews. Although many have argued that the economic gains to drug treatment come from increasing employment among the treated (34), there is little evidence to date regarding work outcomes following treatment, and existing evidence is mixed at best (13,14). In this setting of female caregivers, we find that reduction of substance use accompanies work and public program use patterns that parallel those of light/non substance users.

Our findings are salient in light of ongoing changes following the landmark Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996. The PRWORA replaced the entitlement program Aid to Families with Dependent Children with TANF, a series of block grants to states with the goals of increasing work participation, increasing self-sufficiency, and lowering welfare caseloads. Toward these goals, PRWORA imposed 60-month lifetime limits on the receipt of income assistance through TANF and required TANF recipients to work in exchange for benefits.

In this environment, states' treatment of women with behavioral health issues varied widely. In some cases, mental health or substance abuse treatment counted towards work requirements or women in treatment were exempt from requirements. In contrast, other states performed no mental health assessments, and treatment activity had no impact on work requirements. In this highly variable environment, welfare caseloads plummeted by 60 percent from 1995 to 2000 and have remained low since then, employment among single mothers rose, and poverty in single female-headed households has been stable. These changes led many to declare welfare reform a success (35,36), although there is virtual consensus that strong economic conditions during the late 1990s played an important role in raising employment among women (36). Though data on women with mental or substance use disorders is limited, women with mental health and substance use disorders were relatively more likely to retain benefits after enactment of PRWORA, moved into work more slowly than other TANF recipients, and were more likely to be sanctioned than other TANF recipients (37-41).

In June 2006, the reauthorization of TANF effectively increased the number of TANF recipients who must work, and the weekly hours of work activity expected from program recipients, and changed TANF in ways likely to affect women with substance use disorders. Most notably, the reauthorization severely limits states' ability to count behavioral health treatment activity towards work requirements, thus creating additional pressure to work combined with additional barriers to substance abuse treatment among low-income women with substance use disorders. Prior studies with a disproportionate number of male participants may not be applicable for debates about how potential TANF recipients, among whom 90 percent are female caregivers, are likely to fare under TANF's new stricter work requirements and limitations on access to treatment. Our findings suggest that declining or light/no substance use coincide with more work and less reliance on public programs, compared with women reporting increasing substance use or moderate/heavy use at both waves.

We find that caregivers who reduced substance use experienced marginally significant mental health improvements, and they reported behavioral improvements among their children at rates that paralleled caregivers with light/no substance use in both waves. In contrast, caregivers with increasing substance use or heavy use in both waves were significantly less likely to report improvements in their own mental health or child behavior compared to other women. These findings are consistent with the notion that self-sufficiency and good mental health can be complementary goals. This echoes the assertions of the literature on supported work programs for individuals with severe mental disorders (42). However, women who reduced substance use between waves were more likely to lose health insurance compared to others. This setback can pose a threat among former heavy substance users who may require treatment services in order to consolidate the gains they have made and decrease the possibility of relapse. Research demonstrates that retention in treatment is associated with abstinence over time and this may be especially true for women (6).

Our findings together suggest caution as states implement new, stricter TANF regulations since its 2006 reauthorization. Women who reduce substance use through any means have economic and well-being outcomes that did not differ significantly from caregivers reporting light/no substance use at both interviews. Regulations that prevent states from counting mental health and substance abuse treatment towards work requirements will more likely impede access to substance abuse treatment, subsequently shrinking the number of women who successfully reduce substance use.

Our results should be viewed in light of several limitations. First, we observe no information on treatment. We, therefore, do not know whether decreases in substance use from wave 1 to wave 2 were accomplished with or without treatment, or what types of treatment services might have been utilized. We also do not know if those whose substance use increased or remained the same engaged in treatment services. Our research, however, builds on the few previous treatment studies that demonstrate increased employment following treatment (3). Our findings demonstrate that within an economically disadvantaged female population, decreases in substance use are associated with positive work and income assistance outcomes, in contrast to negative outcomes documented among women with increasing or heavy substance use in both waves.

Second, our observational data do not allow one to clearly establish the timing of events such as changes in substance use patterns, work status, or program use. Thus, our results present associations rather than establishing causal relationships between substance use patterns and self-sufficiency, or well-being outcomes.

Third, because we had data on relatively few moderate to heavy substance users, we were unable to break out effects for women based on alcohol, marijuana, or illicit drug use. There is considerable evidence of the telescoping course of both alcohol use disorders and drug use disorders on the social and medical consequences for women. In addition, among substance abusing mothers whose children were referred to child welfare services, 68 percent of children had mothers who abuse either alcohol or drugs and 37 percent had mothers who abused both (43). Related to this, due to limited power, we were unable to separately analyze women who reported moderate/heavy use in both waves compared to women who reported moderate/heavy use in wave 2 only.

Fourth, we focused on women caring for children aged 0–4 and 10–14 at baseline, thus our results may not extend to women without children or to men, but instead are intended to fill in gaps in the literature on women and substance use.

Finally, the study relied on self-reports of substance without validity testing using urine toxicology or collateral informant reports. However, studies demonstrate that self-report of

substance use is likely to be valid when compared with objective measures when subjects perceive there is no adverse consequence to giving valid reports (44). In a recent treatment study of women with substance abuse, 93–97 percent of self-reports were consistent with urine toxicology (6). In this survey, if anything, substance use is likely to be underreported and our results are therefore conservative.

Conclusions

Female caregivers with increased substance use fared poorly on measures of well-being and work relative to others. Policies that promote, rather than impede reductions in substance use, are more likely to promote self-sufficiency and well-being.

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APPENDIX TABLES

Table A1
Substance use patterns, by substance

	Wave 1 N(weighted %)	Wave 2 N(weighted %)
Moderate/heavy alcohol use	100(4)	109(8)
Moderate/heavy marijuana use	61(5)	71(6)
Moderate/heavy use of other illicit drugs	13(1)	14(1)
Moderate/heavy use of alcohol, marijuana, or other illicit drugs	149(10)	161(10)

Moderate/heavy alcohol use = 1 if respondent reported being drunk several times or more often in the last 12 months. Moderate/heavy marijuana (or other illicit drug) use = 1 if caregiver reported using marijuana (or other illicit drug) several times or more often in the last 12 months.

Table A2
Relative Risk Ratios from Models in Table 2

	TANF or SSI	Detached
Reduced use	.715 (.408) [−0.05] ^a	1.17 (.516) [0.04] ^a
Increased use	2.22 (1.11) [0.07] ^a	2.08 (.781) [0.08] ^a
Work in wave 1	.230 (.098) _{**}	.158 (.043)
TANF in wave 1	2.16 (.744)	.310 (.100)
Chicago	1.05 (.407)	1.19 (.297)
San Antonio	1.41 (.557)	1.30 (.353)
High School degree	.382 (.136)	.703 (.185)
Live w/ spouse	.581 (.291)	1.15 (.333)
Live w/ partner	.690 (.254)	.957 (.311)
Black	.340 (.231) _{**}	.838 (.369)
Hispanic	.241 (.149)	.942 (.410)
Age under 30	1.07 (.412)	1.41 (.408)
Age 40+	1.11	1.14

TANF or SSI	Detached
(.478)	(.373)

^a -Numbers in [] show the marginal effect compared to women with light/no use in both waves. Thus, women with increased use are 8 percentage points more likely to be detached compared to women with light/no use in both waves.

* = p < .10

** = p < .05

*** = p < .01

Table A3
Odds Ratios from models in Table 3

	Medicaid	Lose insurance	Gain insurance
Reduced use	.654 (.382) [-0.06] ^a	3.85 ^{**} (1.95) [0.22] ^a	1.07 (.829) [0.01] ^a
Increased use	1.07 (.400) [0.01] ^a	.858 (.438) [-0.02] ^a	.195 [*] (.137) [-0.29] ^a
Work in wave 1	1.04 (.334) ^{**}	.685 (.269)	1.37 (.775)
TANF in wave 1	2.90 (1.19)	.556 (.251) ^{***}	1.92 (1.28) ^{***}
Chicago	.967 (.246) ^{***}	3.63 (1.55) ^{***}	.147 (.075) ^{***}
San Antonio	.375 (.120)	6.54 (2.26) ^{**}	.130 (.063) ^{**}
High School degree	.440 (.141) ^{***}	1.43 (.541)	1.33 (.597)
Live w/ spouse	.519 (.162) ^{**}	.528 (.232)	1.72 (.909) [*]
Live w/ partner	.557 (.185)	.597 (.295)	.174 (.133) ^{**}
Black	.957 (.370)	.741 (.611)	.572 (.519) [*]
Hispanic	1.03 (.405) [*]	1.45 (1.13)	.175 (.153)
Age under 30	1.73 (.555)	1.01 (.396)	.675 (.325) [*]
Age 40+	1.36 (.441)	1.27 (.568)	.379 (.198)

^a Numbers in [] show the marginal effect compared to women with light/no use in both waves. Thus, women who reduced substance use between waves are 22 percentage points more likely to lose insurance compared to women with light/no use in both waves.

* = p < .10

** = p < .05

*** = p < .01

Table A4
Odds Ratios from models in table 4

	BSI improves	CBCL improves
Reduced use	2.16 [*] (.914) [0.13] ^a	1.32 (.763) [0.05] ^a
Increased use	.355 ^{**} (.184) [-0.09] ^a	.132 ^{***} (.074) [-0.18] ^a
TANF in wave 1	.794 (.273)	1.15 (.538)
Work in wave 1	1.34 (.445)	1.59 (.687)
Chicago	.929 (.280)	.879 (.291)

	BSI improves	CBCL improves
San Antonio	1.32 (.410)	2.12** (.685)
High School degree	.616 (.191)	.665 (.250)
Live w/ spouse	1.48 (.439)	.952 (.366)
Live w/ partner	.906 (.346)	1.17 (.468)
Black	1.19 (.641)	3.21*** (1.42)
Hispanic	1.59 (.935)	5.07*** (2.13)
Age under 30	.887 (.255)	1.39 (.517)
Age 40+	.666* (.257)	.738 (.298)

BSI=Brief Symptom Inventory, CBCL=Child Behavior Checklist, TANF=Temporary Assistance to Needy Families.

^aNumbers in [] show the marginal effect compared to women with light/no use in both waves. Thus, women who increased substance use between waves are 18 percentage points less likely to report that child behavior improved between waves.

*
= p < .10

**
= p < .05

= p < .01

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Table 1
Characteristics of Female Caregivers at Wave 1 and Wave 2

	Wave 1		Wave 2	
	N	Weighted ^a %	N	Weighted ^a %
DEMOGRAPHICS				
Race/ethnicity^b				
Black non-Hispanic	692	42	692	42
White/other non-Hispanic	155	7	155	7
White Hispanic	776	51	776	51
Age at time of interview				
under 30	744	43	648	41
30–39	562	38	582	36
40+	317	19	393	24
Marital & cohabitation status				
Married & live with spouse in wave 2	241	32	300	32
Lives with partner in wave 2	101	6	186	9
Unmarried and without partner	1281	62	1137	59
Education^c				
Has a high school degree/GED			1025 ^b	60
Less than high school degree			598	40
City				
Boston	605	33	605	33
Chicago	500	33	500	33
San Antonio	518	33	518	33
SUBSTANCE USE & MENTAL HEALTH				
Alcohol, Marijuana, or other illicit drug use				
Light to no use in last 12 months	1474	92	1462	90
Moderate to heavy use in last 12 months	149	8	161	10
Reduced use between waves	91	4	91	4
Increased or reported moderate/heavy use	155	9	155	9
Light/no use in both waves	1377	88	1377	88
Mental health^d				
Poor caregiver mental health (BSI)	124	7	126	8
BSI improved between waves (caregiver)			269	17
BSI worsened between waves (caregiver)			221	13
BSI did not change between waves (caregiver)			1133	70
Poor child behavior (CBCL)	351	18	355	22
CBCL improved between waves (child)			184	21
CBCL worsened between waves (child)			125	9
CBCL did not change between waves (child)			1214	71
ECONOMIC OUTCOMES				
Work and use of public assistance				
Work (with or without income assistance)	753	44	970	57
Received income assistance	423	22	293	18
Neither worked nor received income assistance	447	34	360	25
Health Insurance				
Medicaid coverage	1240	69	1143	64
Lost health insurance between waves			201	10
Gained health insurance between waves			232	15
No change in health insurance coverage			1190	75

^aWeights make population representative of Boston, Chicago, and San Antonio neighborhoods sampled.

^bRaces other than Black or White accounted for 2.7% of the sample, and no women in the study were of black race and Hispanic ethnicity.

^cEducation is reported for wave 2 only because measured education is not directly comparable between waves 1 and 2, as described in footnote 17 of the survey documentation publication, "Welfare, Families, and Children: A Three-City Study," Fomby, P., Estacion, A. and Moffit, R., Johns Hopkins University, 2003, (available at <http://web.jhu.edu/threecitystudy/images/CharacteristicsReport.pdf>).

^dBSI=Brief Symptom Inventory, CBCL=Child Behavior Check List.

Table 2
Wave 2 work and income assistance according to change in substance use between waves 1 and 2

Substance use pattern	N	Weighted %	Working	Adjusted % of caregivers who were: TANF or SSI	Detached
Reduced use	91	4	61	14	25
Increased/Heavy use	155	9	45	26	29*
Light/no use (both waves)	1377	88	60	19	21

** p < .05, ***p<.01 for test of share in this category compared with the “Light/no use” category in multinomial logit models controlling for black race, Hispanic ethnicity, and high school degree, marital and cohabitation status, and age (<30 or 40+) at wave 2 interview and wave 1 work and TANF status.

* = p < .10

Health insurance and patterns of substance use between waves 1 and 2

Table 3

Substance use pattern	N	Weighted %	Medicaid in wave 2	Adjusted % of caregivers who were: Lost health insurance	Gained health insurance
Reduced use	91	4	64	38***	64
Increased/Heavy use	155	9	71	14	34**
Light/no use (both waves)	1377	88	70	16	63

* = p < .10

for test of difference between this category compared with the “No change No/light use” category in logistic regression models controlling for high school degree, marital and cohabitation status, black race, Hispanic ethnicity, and age (<30 or 40+) at wave 2 and wave 1 work and TANF status. Estimate of “lost health insurance” applies to 1150 caregivers with health insurance in wave 1, while “gained health insurance” model applies to 473 caregivers without health insurance in wave 1.

**
p < .05

p<.01

Table 4

Well-being and patterns of substance use between waves 1 and 2

Substance use pattern	N	Weighted %	Adjusted % of caregivers reporting: improved mental health (BSI)	Adjusted % of caregivers reporting: improved child behavior (CBCL)
Reduced use	91	4	28*	27
Increased/Heavy use	155	9	6**	4***
Light/no use (both waves)	1377	88	15	22

for test of difference between this category compared with the “No change No/light use” category in logistic regression models controlling for high school degree, marital and cohabitation status, black race, Hispanic ethnicity, and age (<30 or 40+) at wave 2 interview and wave 1 work and TANF status.

*
= p < .10

**
= p < .05

= p < .01