

Toward a Fuller Understanding of Nonresident Father Involvement: An Examination of Child Support, In-Kind Support, and Visitation

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Abstract The majority of studies of nonresident father involvement focus on either child support payments or visitation. However, nearly 60% of custodial parents receive in-kind (i.e., noncash) support of some form. Using data from a nationally representative sample of children with nonresident fathers (the Child Development Supplement of the Panel Study of Income Dynamics), we simultaneously investigate via a trivariate probit model the relationships among three aspects of father involvement: child support, in-kind support, and visitation. We find that these dimensions of involvement are positively related and highly intertwined with the strongest positive relationship being between in-kind support and visitation. Additionally, these aspects of involvement have different sets of determinants. Economic characteristics of the resident household are more frequently associated with the receipt of child support, while demographic characteristics of the child, mother, father and resident household are related to all three aspects of nonresident father involvement. Generally speaking, when differences in impacts of determinants vary for lower and higher income resident families, the differences are related to the receipt of child support. Fewer differences are observed with regard to in-kind support receipt or with visitation. Our model also measures how unobserved factors are related to these facets of involvement. Most notable across income groups is that unobserved factors are positively related for child support and in-kind support

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receipt for higher income resident households. This relationship is insignificant for lower income resident households.

Keywords Child Development Supplement · Child support · In-kind support · Nonresident fathers · Panel Study of Income Dynamics · Visitation

Over 21 million children live with only one of their biological parents, usually their mother, while their other biological parent lives elsewhere (Grall 2006). In response, social policy seeks to ensure that these children have at least the financial support of both parents (e.g., Office of Child Support Enforcement 2008). Generally, the financial support provided by nonresident parents is measured through the payment of child support (Garasky et al. 2006). Evidence suggests, however, that some nonresident parents, especially low-income parents, use informal support arrangements including in-kind (i.e., noncash) contributions (Waller and Plotnick 1999) such as purchasing toys, clothing, or school supplies for the child. Less than half of all custodial parents actually receive child support payments based on data from the Current Population Survey (CPS), but nearly 60% receive in-kind support of some form (Grall 2006). While these in-kind contributions add to the economic well-being of the child and the resident parent family, they are not recognized as meeting support obligations set through child support awards (Waller and Plotnick 1999; Ways and Means Committee 2008). In addition, little research has simultaneously assessed the receipt of both child support and in-kind contributions, and their relationship to a third aspect of nonresident father involvement—visitation.

In this paper, we use nationally representative data from the Child Development Supplement (CDS) of the Panel Study of Income Dynamics (PSID) to investigate relationships among child support, in-kind support, and visitation from nonresident fathers using a trivariate probit model that includes a standard set of covariates that have been associated with these three outcomes in past literature. Whereas the determinants of cash child support receipt (e.g., Beller and Graham 1993; Garasky 1994; Garfinkel et al. 1998; Garfinkel et al. 2004) and visitation (e.g., Flouri 2006; Johnson 2001; Stewart 1999a, b) have been studied in detail, much less is known about the provision of in-kind support. This is in part because few national data sets ask about this form of support (Garasky et al. 2006). What is known about in-kind support receipt comes from studies of specific populations including fathers of children born to disadvantaged teenage mothers (Rangarajan and Gleason 1998), low-income families in specific cities and states (Edin and Lein 1997; Waller and Plotnick 1999), and African American fathers (Greene and Moore 2000; Roy 1999). Although in-kind support is often provided in the context of visitation (e.g., Edin and Lein 1997; Rangarajan and Gleason 1998), studies examining nonresident fathers' involvement with children generally do not include this aspect of involvement (e.g., King et al. 2004; Stewart 2003) or do not provide separate analyses of formal child support versus in-kind support (Seltzer et al. 1989). We build on this prior research and examine in depth the interrelationships of these important aspects of nonresident father involvement which are of interest to both researchers and policy makers.

The present study advances the understanding of nonresident father involvement in two important ways. First, we simultaneously examine factors associated with the receipt of child support, the receipt of in-kind support, and visitation from nonresident fathers through the estimation of a trivariate probit model that allows for an examination of the joint relationships between these three variables of interest, controlling for economic and demographic factors. In addition, the trivariate probit estimation yields measures of the correlations between the outcome variables after controlling for these observed factors. A second contribution of this study is that we analyze these relationships for not just low-income families, but for all families and examine whether these relationships vary by family income level (i.e., above and below 200% of the poverty line).

Our multivariate analyses indicate that these dimensions of involvement are highly intertwined. Numerous economic and demographic factors are associated with involvement and these relationships vary across the three types of involvement. Unobserved factors that are positively associated with greater in-kind support receipt also increase the likelihood of visitation and vice versa. Relationships of observed and unobserved factors vary for lower and higher income resident families indicating that evidence of important associations is confounded when lower and higher income samples are pooled.

We begin with a review of the literature related to the receipt of child support and in-kind support, and how support receipt has been linked with visitation between a nonresident father and his child. This review is followed by a summary of the trivariate probit model we estimated with data from the second round of the Child Development Supplement (CDS-II) of the Panel Study of Income Dynamics (PSID). A discussion of our findings and conclusions complete the text.

Background

Relationship Between Child Support, In-Kind Support, and Visitation

Economic contributions by nonresident fathers to their children's lives are typically assessed in terms of cash child support payments (Garasky et al. 2006), but these contributions can also include informal cash support (Nepomnyaschy 2007). Whether nonresident fathers pay child support is important insofar as this additional income has been found to lead to fewer children living in poverty and better physical, social, and academic outcomes for children (Argys et al. 1998; Bartfeld 2000; Cook et al. 2008; Pirog and Ziolo-Guest 2006; Sorensen and Zibman 2000a, b). Child support is also thought to have symbolic meaning, representing to the child the nonresident parent's care and concern. This "psychological contribution" may improve children's well-being beyond the effects of raising the child's standard of living (Argys et al. 1998; Aughinbaugh 2001; Graham et al. 1994; Knox 1996; Knox and Bane 1994; McLanahan and Sandefur 1994; Menning 2006; Pirog and Ziolo-Guest 2006; Seltzer 1994).

In light of the benefits to children and society (e.g., reducing dependency on public assistance) associated with child support receipt, social policy emphasizes

the payment of child support by nonresident parents (Ways and Means Committee 2008). In fact, the mission of the federal Child Support Enforcement Program is to assist parents in obtaining financial and medical support for children with nonresident parents (Office of Child Support Enforcement 2008). Nevertheless, over 60% of all custodial parents still do not receive child support income (Grall 2006). Efforts to increase the payment of child support by nonresident parents have had some success. For example, Wisconsin provided low-income resident parents participating in Wisconsin Works, a state public assistance program for low-income families, with more of the support payment (as opposed to the state keeping the support to offset public assistance expenditures) in hopes that this “pass through” of support to the family would provide nonresident parents with more incentive to make child support payments. Demonstration evaluation results generally indicate that a greater percentage of mothers in the full pass-through group had child support paid on their behalf relative to the partial pass-through group, although this result is not consistent across all subgroups and evaluation cohorts (Meyer and Cancian 2003). Data from the Current Population Survey (CPS) indicates that pass-through programs are positively associated with receipt of child support (Sorensen and Hill 2004). Moreover, full versus partial pass-through of child support is positively associated with informal transfers such as diapers, clothes, shoes, gifts, and food or groceries (Seltzer and Schaeffer 2001).

While a majority of custodial parents do not receive child support payments (Grall 2006), nonresident fathers may still make economic contributions to their child’s well-being through alternative support measures, specifically in-kind support. Nonresident fathers may contribute to meeting the needs of their children through the provision of in-kind support such as purchasing toys, clothing, or school supplies for the child. However, how the provision of in-kind support is related to cash child support payments is currently unclear. One hypothesis is that in-kind contributions are associated with lower payments of cash support. For example, small-sample studies of low-income single mothers reveal that nonresident fathers provide a considerable amount of in-kind support in the form of clothes, dinners, toys, diapers and formula *in lieu of* cash support (Edin and Lein 1997; Greene and Moore 2000). Another hypothesis would suggest that providers of in-kind support are also more likely to pay child support. That is, nonresident fathers who are involved with their children tend to be involved in multiple realms including providing in-kind and cash support. A positive relationship between child support and in-kind support has been found in previous research using small-scale data sets (e.g., Rangarajan and Gleason 1998; Seltzer and Schaeffer 2001). However, in-kind support provision has not been examined in this way with nationally representative samples.

With respect to visitation, several current policy initiatives focus on increasing father involvement and encouraging positive parenting practices along with the payment of child support (Roberts 2006). Social interaction with nonresident fathers has been consistently associated with a wide range of child outcomes including improved academic achievement and fewer behavioral and emotional problems (Amato and Gilbreth 1999; Buchanan et al. 1996; Coley 2003; Coley and Chase-Lansdale 1999; Stewart 2003).

Studies examining the relationship between nonresident father visitation and child support receipt indicate they are positively associated (Amato et al. 2009; Huang 2009; Nepomnyaschy 2007; Rangarajan and Gleason 1998; Seltzer et al. 1998; Stewart 1999a, b). In particular, Rangarajan and Gleason (1998) suggest that fathers may decide that parenthood is an all-or-nothing proposition and thus they choose to be involved in all aspects of the lives of their children. In-kind support may be linked with the frequency of father-child contact as well (e.g., Rangarajan and Gleason 1998). Compared to current automated methods for paying child support (e.g., wage withholding), the provision of in-kind support more likely depends upon the father seeing the child. This is consistent with Seltzer and Schaeffer (2001) who find a stronger positive relationship between visitation and informal transfers than formal transfers. Similarly, Nepomnyaschy (2007) finds that child support paid through the child support enforcement system (formal child support) and visitation are marginally related, but a strong, positive relationship exists between visitation and support paid outside of the enforcement system (informal support).

Moderating Effect of Income

The relationships between child support, in-kind support, and visitation may also depend on the incomes of the resident and nonresident families. Among low-income families, nonresident fathers often do not have the financial resources to keep up with their child support obligations (Cancian and Meyer 2004; Garfinkel et al. 1998; Meyer 1998) and may provide in-kind support in lieu of child support payments (Edin and Lein 1997; Greene and Moore 2000). This suggests a negative relationship between child support and in-kind support. On the other hand, two studies have found a positive relationship for some low-income families (Garasky et al. 2006; Rangarajan and Gleason 1998). Studies have not examined whether the relationship between visitation and in-kind support varies by family income, except to the extent that these two forms of father involvement appear to coexist among low-income families (Edin and Lein 1997; Greene and Moore 2000). In addition, Garasky and colleagues (2006) find that many children from low-income families receive multiple forms of support.

A positive association between child support payments and in-kind support may be more likely among higher-income than lower-income fathers. Previous research indicates that nonresident fathers who pay child support have much higher incomes than non-paying fathers (Garfinkel et al. 1998) and that the nonresident fathers of lower-income children are especially prone to lower probabilities of financial support (Huang et al. 2005; Mincy and Sorensen 1998). This suggests that, in comparison to lower income children, higher income children may be more likely to receive both types (child support and in-kind support) of economic support. However, the receipt of multiple forms of support has not been examined across resident family income levels in previous research. Nor have these forms of support been analyzed in concert with visitation.

In sum, the literature offers different perspectives on how child support, in-kind support, and visitation may be related to one another. In addition, evidence suggests

that these relationships may vary by resident family income. Important to this research is that no previous work has simultaneously examined the relationship among all three of these factors. As such, we do not assert a priori how these factors are related to one another.

Methods

Empirical Model

The central focus of this paper is on the relationships among child support (CS), in-kind support (IKS), and visitation (V). To understand these relationships, we first examine these associations through bivariate analyses. We then estimate the following trivariate probit model:

$$\begin{aligned}\Pr(\text{CS}_j = 1|\mathbf{Z}) &= \Phi\left(\alpha^{\text{CS}} + \Psi^{\text{CS}}\mathbf{Z}_j + \varepsilon_j^{\text{CS}}\right) \\ \Pr(\text{IKS}_j = 1|\mathbf{Z}) &= \Phi\left(\alpha^{\text{IKS}} + \Psi^{\text{IKS}}\mathbf{Z}_j + \varepsilon_j^{\text{IKS}}\right) \\ \Pr(\text{V}_j = 1|\mathbf{Z}) &= \Phi\left(\alpha^{\text{V}} + \Psi^{\text{V}}\mathbf{Z}_j + \varepsilon_j^{\text{V}}\right)\end{aligned}$$

where j denotes a child; \mathbf{Z} is a vector of economic and demographic covariates; and ε is an error term. All analyses are weighted using individual weights for the child. In addition, estimated standard errors are adjusted for clustering (children from the same household).

The joint estimation of this model yields measures of the correlations between ε^{CS} and ε^{IKS} , ε^{CS} and ε^{V} , and ε^{IKS} and ε^{V} . Correlation coefficients (denote these as ρ_k , $k = 1, 2, 3$, respectively) estimate how unobserved factors (e.g., aspects of the relationship between the child's parents at the time of the child birth, the quality of the current relationship between the child's father and mother, the effectiveness of state child support enforcement procedures) jointly affect the outcomes of interest. A negative value of, say, ρ_1 , means that, after controlling for other observed factors, unobserved factors affecting the receipt of child support are inversely related to in-kind receipt and vice versa. Conversely, if, say, ρ_2 is positive, this would then mean that, after controlling for observed factors, for children in households receiving (or not receiving) child support unobserved factors affecting this outcome also make these children more (less) likely to visit with their nonresident father. Finally, if, say, $\rho_3 = 0$, this indicates that, after controlling for other factors, there is no correlation between the unobserved factors affecting in-kind support and unobserved factors affecting visitation.¹ To test whether the relationships among child support, in-kind support, and visitation differ by the income level of the child's family, we estimate our models not only with the full sample, but also with a sample of households with incomes below

¹ For other uses of the trivariate probit model, see, for example, Bollinger and David (2001), Büchel and Pollmann-Schult (2004), Gage (2005), and Loureiro and Nayga (2007).

200% of the poverty line and with a sample of households with incomes at or above 200% of the poverty line.

Data

Our analyses are conducted with data from the second Child Development Supplement (CDS-II) of the Panel Study of Income Dynamics (PSID). The PSID, begun in 1968, is a longitudinal study of a representative sample of individuals and family units which reside in the United States. While emphasizing the dynamic aspects of economic and demographic behavior, the content of the PSID is broad and includes a range of measures relevant to this research. In 1997, a refresher sample of post-1968 immigrant families and their adult children was introduced to keep the study representative of the U.S. population.

The CDS is a major content expansion of the PSID that was introduced in 1997. The CDS focuses on the human capital development of children age 0–12 in PSID families in 1997 (PSID 2005). Interviews were conducted with both the child and the child's primary caregiver, which usually was the child's mother. The major advantage of the CDS to this research is that it contains a rich set of questions regarding the receipt of in-kind support and child and nonresident parent interactions. This information was reported by the child's primary caregiver.²

We examine information from the second set of CDS interviews conducted in 2002. The unit of observation for our analysis is the child. Our analytic sample consists of 783 children ages 4–17 in 2002 who lived with their mother and had a father who lived elsewhere. When weighted, CDS-II data represent all children in the United States born between 1985 and 1997. We supplement the CDS-II data with contemporaneous data from the 2001 PSID interview wave.

Variables and Descriptive Statistics

Dependent Variables

As described above, we are interested in three central outcomes—child support receipt, in-kind receipt, and visitation.³ Child support receipt is measured using two sources of information. First, respondents to the 2001 PSID interview were

² Obtaining information regarding child support receipt, in-kind support receipt, and interactions between the nonresident father and his children from mothers is standard among national surveys [e.g., Current Population Survey (CPS), Survey of Income and Program Participation (SIPP)]. Limited evidence suggests that mothers may underreport this information while fathers may overreport it (Braver et al. 1991; Seltzer and Brandreth 1994).

³ Estimating a trivariate probit model requires dichotomizing each of the three dependent variables. Our model incorporates the most generous definitions of providing child and in-kind support and of visiting. We note here that these results were generally stable and robust across a range of dichotomizations of the three dependent variables including setting the threshold for child support receipt at \$0, \$100 and \$200, setting the threshold for in-kind support receipt at one and two of the seven items examined here, and setting the threshold for visitation at once a year and several times a year. The results from these other estimations are available from the authors by request.

asked whether they received any income in 2000 from child support and, if yes, how much was received. This income reporting approach aggregates child support receipt across all nonresident parents who may have paid support for children in the interviewed household. As such, this measure combines formal support in response to a legal child support order and informal cash support. For these analyses, we assume that at least some of the child support received was for the focal child. Unfortunately, the PSID does not contain child support award information. As a result, characteristics of other children in the household and other nonresident fathers may also affect the receipt of child support attributed here to the focal child. Second, the CDS-II provides information regarding the provision of medical support (i.e., medical insurance and out of pocket medical expenditures) by the nonresident parent to the focal child. Child support agencies are required to petition for medical support as part of most child support orders (Ways and Means Committee 2008). Given that this medical support is most likely required of the nonresident parent, we assume that if a nonresident parent provided medical support, then that parent also provided child support. For the trivariate probit model, child support receipt is dummy coded with '1' indicating some child support or medical support was received and '0' indicating that no child support or medical support was received. For simplicity we refer to this measure as child support receipt.

Information about the receipt of in-kind support is drawn from responses to seven questions in the CDS-II about support provided for the child by his or her father. A value of '1' for this variable is assigned if the child's father spent money during the past 12 months on any of the following items for the child: (1) toys or presents; (2) school supplies; (3) clothes or shoes; (4) camp or lessons; (5) entertainment; (6) extra-curricular activities; and (7) anything else. A value of '0' indicates that none of these forms of in-kind support were received.

Visitation is based on how frequently the child saw his or her father. It is derived from the question: During the past 12 months, about how often did the child see (his/her) father? Valid responses were: (1) not at all, (2) about once a year, (3) several times a year, (4) one to three times a month, (5) about once a week, and (6) several times a week. Similar to previous research (e.g., Seltzer 1991; Stewart, 1999a), visitation is dummy coded with '1' indicating at least some visitation took place (once a year or more) and '0' indicating no visitation at all in the last year.

Table 1 displays descriptive statistics for our sample. Slightly over one-half (56%) of the families with nonresident fathers in this study received child support. A similar percentage (53%) received some form of in-kind support, while two-thirds (68%) of the children visited with their father at least once in the prior 12 months. Children in lower income families (family income below 200% of poverty) were less likely to receive child support (47%), receive in-kind support (43%), or visit with their father (62%) compared to children from higher income families (family income at or above 200% of poverty) with 66%, 63% and 75%, respectively. The most common type of in-kind support provided by fathers was toys or presents (49%), followed by clothes or shoes (29%). Children in lower income families generally were less likely to receive each of the specific types of in-kind support

Table 1 Descriptive Statistics

Variable	Mean (Std. Dev.)		
	Full sample	Lower income	Higher income
<i>Nonresident father involvement</i>			
Child's family received child support	0.564	0.465***	0.666
Child received any in-kind support	0.527	0.429***	0.630
Child visited with father	0.681	0.617**	0.748
Child received specific types of in-kind support			
Toys or presents	0.490	0.385***	0.598
Clothes or shoes	0.292	0.269	0.317
School supplies	0.139	0.121	0.157
Paid for camp or lessons	0.051	0.026***	0.076
Entertainment	0.029	0.024	0.034
Extra-curricular activities	0.007	0.008	0.005
Anything child needs	0.009	0.004	0.013
<i>Economic factors</i>			
Mother's employment (weeks worked in last year)	11.776 (1.359)	5.688*** (1.301)	18.114 (2.093)
Family owns a home	0.466	0.321***	0.617
Family received TANF benefits in the last 12 months	0.100	0.161***	0.037
Family received Food Stamps in the last 12 months	0.196	0.364***	0.021
Family income (1000s of dollars)	45.090 (3.713)	19.686*** (1.068)	71.536 (6.344)
<i>Demographic factors</i>			
Child characteristics			
Age: 0–5	0.091	0.130***	0.051
Age: 6–11	0.466	0.464	0.468
Age: 12–18	0.443	0.406	0.481
Male	0.478	0.508	0.447
Has fair or poor health	0.039	0.076	–
Last time child lived with father: Never lived with father	0.149	0.178***	0.118
Last time child lived with father: 3 or fewer years ago	0.179	0.181	0.177
Last time child lived with father: 4 or more years	0.413	0.321	0.508
Last time child lived with father: Do not know	0.260	0.320	0.197
Characteristics of the child's mother			
Age (years)	36.436 (0.546)	35.226 (0.889)	37.695 (0.536)
Race: White	0.565	0.416***	0.720
Race: Black	0.319	0.405	0.230
Race: Other	0.116	0.179	0.050

Table 1 continued

Variable	Mean (Std. Dev.)		
	Full sample	Lower income	Higher income
Education: Less than high school	0.193	0.291***	0.092
Education: High school or GED only	0.369	0.392	0.346
Education: Greater than high school	0.437	0.318	0.562
Marital status: Currently married	0.246	0.104***	0.394
Marital status: Currently not married, but cohabitating with a male partner	0.141	0.109	0.175
Marital status: Currently not married and not cohabitating with a male partner	0.613	0.787	0.432
Has emotional problems	0.016	0.022	0.011
Has physical problems	0.029	0.040*	0.018
Characteristics of the child's father			
Distance child lives from father: ≤10 miles	0.245	0.248***	0.242
Distance child lives from father: >10 miles, ≤50 miles	0.269	0.240	0.298
Distance child lives from father: >50 miles	0.197	0.173	0.222
Distance child lives from father: Do not know	0.289	0.338	0.237
Marital status: Currently married	0.260	0.213***	0.310
Marital status: Currently not married	0.477	0.469	0.485
Marital status: Current marital status not known	0.263	0.318	0.205
Has had children since those with child's mother: Yes	0.239	0.268***	0.209
Has had children since those with child's mother: No	0.493	0.405	0.585
Has had children since those with child's mother: Not known	0.268	0.327	0.207
Characteristics of the child's household			
Number of children under age 18	2.229 (0.070)	2.533*** (0.115)	1.913 (0.084)
Number of adults (age 18 or older)	1.658 (0.052)	1.506*** (0.067)	1.816 (0.071)
<i>Number of children (unweighted)</i>	783	465	318

Notes: Weighted means using individual weights for the child. Variable equals 1 if true and 0 if false, unless otherwise noted. Standard deviations reported in parentheses for continuous variables. Lower income is defined as family income below 200% of poverty. Higher income is defined as family income at or above 200% of poverty. Superscripts of *, **, and *** indicate that the *p*-value of the difference between the lower income and higher income groups is less than 0.10, 0.05, or 0.01, respectively. Superscripts for categorical measures indicate the statistical significance of the difference between the lower income and higher income groups regarding the distribution of the samples across the categories of the independent variable.

listed in Table 1 compared to children from higher income families. The differences between the two groups are statistically significant for toys or presents, and camp or lessons.

Independent Variables

The vector \mathbf{Z} in the model reflects economic and demographic covariates found in other studies to be important to predicting child support receipt, in-kind support receipt, and father-child visitation (e.g., Manning and Smock 1999; Nepomnyaschy 2007; Seltzer 1991; Stewart 1999a, b). Economic factors included in \mathbf{Z} are the number of weeks a mother was employed in the previous year, if the family owned a home, if the household received Temporary Assistance for Needy Families (TANF) or Food Stamp Program benefits, and the income (excluding child support) of the child's family.⁴ Mothers worked about 12 weeks on average in the prior year, less than half (47%) of the children lived with families that were homeowners, one-in-ten families received TANF benefits and one-in-five families received food stamps. Average family income net of child support was \$45,090. Compared to children from higher income families, children in lower income families had mothers who worked less. Also, their families were less likely to own a home, more likely to have received TANF or food stamps, and had lower incomes.

Demographic factors reflect characteristics of the child and the child's mother, father and household. Child characteristics include age, gender, if the child was in fair or poor health, and the last time he or she lived with his or her father. Characteristics of the child's mother include her age, race, education, current marital and cohabitation status, as well as if she has had any emotional or physical problems. Characteristics of the child's father include how far in miles the child lived from him, his current marital status, and whether or not he had additional children with other women since fathering children with the mother of the child in this study. Characteristics of the child's household include the number of children and the number of adults residing in the household.

Few children in our sample were under age six (9%) reflecting the fact that this study examines data from a follow-up survey that took place 5 years after the original CDS. Our sample was evenly split between boys (51%) and girls (49%). Not many children had fair or poor health (4%). Less than one-fifth (18%) of the children lived with their father within the last 3 years; 15% had never lived with their father. For about one-fourth (26%) of the children, their mother did not know the last time the child lived with his or her father. Children from lower income families were younger, and more likely to have never lived with their father or to not know the last time they lived with their father compared to higher income children. The average age of mothers was 36 years. Most mothers were white (57%) and single, neither married nor cohabitating (61%). Over 80% of the mothers had at least a high school education. Lower income mothers were more likely to be non-White and single, while higher income mothers were more likely to be white, have at least a high school education, and be married. Few mothers had emotional (2%) or physical (3%) problems.

⁴ We recognize the potential dual direction of some of the economic variables (e.g., income). While child support, in-kind support, and visitation can affect income and other economic variables, we treat these variables as exogenous. One possibility for avoiding this problem is to eliminate the economic variables from the model, but we believe that this would introduce other problems, especially in terms of potential omitted variable bias.

Most fathers (51%) lived within 50 miles of their child, although over one-fourth (29%) of the children had fathers for whom their mother did not know how far away he lived. Lower income children were more likely to not know where their father lived compared to higher income children. Half (48%) of the fathers were not married currently, although the fathers of higher income children were more likely to be married. About one-fourth (24%) of the fathers were reported to have had more children since the children they fathered with the mother of the child in this study. This was more common among the fathers of lower income children. Overall, one-fourth of the mothers did not know whether the father was married (26%) or whether he had had more children (27%). On average, there were about four people residing in the child's household. Lower income households typically had more children and fewer adults compared to higher income households.

Results

Bivariate Results

In Table 2 we consider the bivariate relationships between child support receipt, in-kind support receipt, and visitation. The top panel is with respect to the full sample. The succeeding panels are for lower income and higher income families separately. As seen by reading down columns (1) and (2), children in families that received child support were more likely than non-recipients to both receive in-kind support (63.3% vs. 39.1%) and visit with their fathers (78.4% vs. 54.9%). Referring to columns (3) and (4), recipients of in-kind support were more likely than non-recipients to receive child support (67.7% vs. 43.8%) and were much more likely to visit with their fathers (96.5% vs. 36.5%). Finally, children who visited with their nonresident fathers (column 5) were more likely than non-visitors (column 6) to receive child support (64.9% vs. 38.2%) and were much more likely to receive in-kind support (74.7% vs. 5.7%).

Turning to the results for lower income and higher income families, the positive relationships found for the full sample also were found for the two subsamples. However, while all of the relationships for higher income families were statistically significant, the relationships between child support receipt and in-kind support were not significant for lower income families. That is, children who resided in lower income families that received child support were no more likely to have received in-kind support from their fathers compared to those who did not receive child support. Similarly, lower income children who received in-kind support were no more likely to have received child support compared to those who did not receive in-kind support. When comparing bivariate associations across income groups, Table 2 reveals that involvement by the nonresident father was greater for children residing in higher income families for nine of the 12 relationships. In these instances the differences between income groups were statistically significant. Statistically significant differences were not found for visitation among children who received

Table 2 Child support receipt, in-kind support receipt, and visitation: bivariate relationships (%)

	Child support		In-kind support		Visitation	
	Yes (1)	No (2)	Yes (3)	No (4)	Yes (5)	No (6)
<i>Full sample (N = 783)</i>						
Child support						
Yes	–	–	67.7	43.8***	64.9	38.2***
In-kind support						
Yes	63.3	39.1***	–	–	74.7	5.7***
Visitation						
Yes	78.4	54.9***	96.5	36.5***	–	–
<i>Lower income (N = 465)</i>						
Child support						
Yes	–	–	55.8 ^{†††}	39.6 ^{††}	54.9 ^{†††}	33.1 ^{**} †††
In-kind support						
Yes	51.4 ^{†††}	35.4 ^{††}	–	–	69.0 [†]	0.8 ^{***} †††
Visitation						
Yes	72.8	52.1 ^{**}	99.3	33.5 ^{***} †	–	–
<i>Higher income (N = 318)</i>						
Child support						
Yes	–	–	76.1	50.5 ^{***}	73.5	46.3 ^{**}
In-kind support						
Yes	71.9	45.1 ^{***}	–	–	79.6	13.5 ^{***}
Visitation						
Yes	82.5	59.5 ^{**}	94.6	41.2 ^{***}	–	–

Notes: Percentages are weighted using individual weights for the child. Lower income is defined as family income below 200% of poverty. Higher income is defined as family income at or above 200% of poverty. Superscripts of *, **, and *** are used in columns (2), (4) and (6) if the χ^2 statistic examining the difference between the results in columns (1) and (2), columns (3) and (4), and columns (5) and (6), respectively, is less than 0.10, 0.05, or 0.01, respectively. Superscripts of †, ††, and ††† are used in the lower income panel if the χ^2 statistic examining the difference between the results for the lower income and higher income samples is less than 0.10, 0.05, or 0.01, respectively.

child support (column 1), did not receive child support (column 2), and received in-kind support (column 3).

Multivariate Results

We now turn to results from our estimations of the trivariate probit model. The results for the full sample examining the receipt of child support, the receipt of in-kind support, and visitation are found in Table 3. The results for lower income and higher income families are found in Tables 4 and 5, respectively. For each, we begin with the relationships of unobserved factors to these aspects of involvement, and then discuss the determinants of each aspect.

Table 3 Determinants of receipt of child support, receipt of in-kind support, and visitation: full sample

Variable	Child support		In-kind support		Visitation	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
<i>Economic factors</i>						
Mother's employment (weeks worked in last year)	-0.008*	0.005	0.006	0.005	0.001	0.008
Family owns home	-0.303**	0.120	0.115	0.122	-0.049	0.208
Family received TANF benefits in the last 12 months	-0.456**	0.199	-0.270	0.199	-0.200	0.363
Family received Food Stamps in the last 12 months	0.110	0.137	0.113	0.141	0.486*	0.248
Income (1000s of dollars in 2001)	0.007***	0.002	0.001	0.002	-0.001	0.003
<i>Demographic factors</i>						
Child characteristics						
Age: 0-5 (omitted category)						
Age: 6-11	-0.074	0.166	0.151	0.178	-0.370	0.344
Age: 12-18	-0.060	0.190	-0.284	0.204	-0.790**	0.391
Male	-0.077	0.103	-0.017	0.107	-0.063	0.175
Has fair or poor health	-0.768**	0.323	0.038	0.288	-0.731*	0.397
Last lived with father: Never lived with father	0.295	0.184	-0.420**	0.177	-0.359	0.331
Last lived with father: 3 or fewer years ago (omitted category)						
Last lived with father: 4 or more years ago	0.270*	0.156	-0.267*	0.152	-0.574*	0.306
Last lived with father: Do not know	0.921*	0.492	-1.096**	0.466	-2.035***	0.582
Characteristics of the child's mother						
Age (years)	0.022**	0.009	0.001	0.009	0.053***	0.017
Race—white	0.606***	0.233	0.414	0.264	0.583	0.420
Race—black	-0.611***	0.220	0.232	0.253	0.541	0.399
Race—other (omitted category)						
Less than high school education	-0.217	0.147	-0.281*	0.152	-0.565***	0.238

Table 3 continued

Variable	Child support		In-kind support		Visitation	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
High school education (omitted category)						
Greater than high school education	0.159	0.118	0.259**	0.124	-0.027	0.205
Currently married	0.017	0.196	-0.079	0.195	0.050	0.309
Currently not married, but cohabitating	0.163	0.246	-0.076	0.249	0.441	0.448
Currently not married and not cohabitating (omitted category)						
Has emotional problems	-0.091	0.454	0.035	0.462	0.101	0.709
Has physical problems	0.033	0.368	0.179	0.433	0.737	1.361
Characteristics of the child's father						
Distance lives from child: 10 miles or less (omitted category)						
Distance lives from child: 10-50 miles	0.319**	0.141	-0.121	0.136	0.180	0.287
Distance lives from child: More than 50 miles	0.037	0.160	-0.399**	0.155	-0.955***	0.234
Distance lives from child: Not known	0.191	0.235	-0.483**	0.231	-1.606***	0.287
Currently married	0.328**	0.133	0.153	0.128	-0.100	0.191
Currently not married (omitted category)						
Current marital status not known	-0.793	0.492	-0.785*	0.419	-0.853*	0.500
Has had more children	-0.223*	0.133	-0.205	0.129	-0.080	0.199
Has not had more children (omitted category)						
Has had more children: Not known	-0.410	0.423	-0.100	0.415	-0.804	0.516

Table 3 continued

Variable	Child support		In-kind support		Visitation	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
Characteristics of the child's household						
Number of children under age 18	0.009	0.049	-0.021	0.051	0.250**	0.097
Number of adults (age 18 or older)	-0.468***	0.096	-0.091	0.086	0.110	0.159
Constant	-0.186	0.438	0.614	0.470	-0.048	0.807
ρ (Std. Err.)						
Child support and in-kind support	0.163**	(0.070)				
Child support and visitation	0.229**	(0.115)				
In-kind support and visitation	0.661***	(0.083)				

Notes: Unweighted number of children = 783. Weighted regressions using individual weights for the child. Standard errors adjusted for clustering (children from same household). Superscripts of *, **, and *** are used if the p -value of the coefficient is less than 0.10, 0.05, or 0.01, respectively.

Table 4 Determinants of receipt of child support, receipt of in-kind support, and visitation: lower income sample

Variable	Child support		In-kind support		Visitation	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
<i>Economic factors</i>						
Mother's employment (weeks worked in last year)	-0.008	0.008	0.003	0.008	-0.003	0.018
Family owns home	-0.262	0.172	0.325*	0.184	0.238	0.417
Family received TANF benefits in the last 12 months	-0.629***	0.233	-0.416*	0.230	0.017	0.519
Family received Food Stamps in the last 12 months	0.258	0.163	0.036	0.165	0.644	0.395
Income (1000s of dollars in 2001)	0.025***	0.009	-0.009	0.010	-0.035*	0.020
<i>Demographic factors</i>						
Child characteristics						
Age: 0-5 (omitted category)						
Age: 6-11	0.016	0.219	0.070	0.228	-0.364	0.501
Age: 12-18	0.013	0.249	-0.628**	0.268	-0.712	0.557
Male	-0.167	0.137	-0.106	0.143	-0.266	0.285
Has fair or poor health	-0.886**	0.372	0.245	0.311	-0.981*	0.508
Last lived with father: Never lived with father	0.072	0.244	-0.576**	0.235	-1.260**	0.573
Characteristics of the child's mother						
Last lived with father: 3 or fewer years ago (omitted category)						
Last lived with father: 4 or more years ago	0.164	0.219	-0.391*	0.214	-1.431**	0.553
Last lived with father: Do not know	0.348	0.673	-1.165	0.725	-2.502**	1.004
Characteristics of the child's mother						
Age (years)	0.030**	0.012	-0.004	0.012	0.069**	0.029
Race—white	1.049***	0.300	-0.412	0.359	1.618**	0.739
Race—black	-0.272	0.268	-0.177	0.328	1.226*	0.637
Race—other (omitted category)						
Less than high school education	-0.217	0.171	-0.326*	0.181	-1.070***	0.365

Table 4 continued

Variable	Child support		In-kind support		Visitation	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
High school education (omitted category)						
Greater than high school education	0.217	0.169	0.507***	0.183	-0.392	0.397
Currently married	0.031	0.283	-0.187	0.292	-0.172	0.552
Currently not married, but cohabitating	-0.346	0.373	-0.039	0.379	-0.246	0.698
Currently not married and not cohabitating (omitted category)						
Has emotional problems	0.207	0.591	-0.333	0.625	-0.973	0.859
Has physical problems	0.614	0.463	0.182	0.509	0.729	3.926
Characteristics of the child's father						
Distance lives from child: 10 miles or less (omitted category)						
Distance lives from child: 10–50 miles	0.280	0.194	-0.040	0.188	-0.289	0.514
Distance lives from child: More than 50 miles	0.139	0.217	-0.534***	0.212	-1.907***	0.481
Distance lives from child: Not known	0.425	0.305	-0.330	0.304	-2.140***	0.503
Currently married	0.209	0.185	0.224	0.182	0.855***	0.346
Currently not married (omitted category)						
Current marital status not known	-1.221	0.751	-0.642	0.566	-1.268	0.932
Has had more children	-0.019	0.175	-0.217	0.168	0.185	0.326
Has not had more children (omitted category)						
Has had more children: Not known	0.476	0.619	-0.340	0.692	-1.626*	0.891

Table 4 continued

Variable	Child support		In-kind support		Visitation	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
Characteristics of the child's household						
Number of children under age 18	-0.010	0.063	0.010	0.062	0.217	0.145
Number of adults (age 18 or older)	-0.496***	0.136	0.029	0.123	0.407	0.301
<i>Constant</i>	-1.095*	0.562	1.418**	0.625	0.335	1.335
<i>ρ (Std. Err.)</i>						
Child support and in-kind support	0.131 (0.094)					
Child support and visitation	0.228 (0.171)					
In-kind support and visitation	0.835*** (0.114)					

Notes: Lower income is defined as family income below 200% of poverty. Unweighted number of children = 465. Weighted regressions using individual weights for the child. Standard errors adjusted for clustering (children from same household). Superscripts of *, **, and *** are used if the *p*-value of the coefficient is less than 0.10, 0.05, or 0.01, respectively.

Table 5 Determinants of receipt of child support, receipt of in-kind support, and visitation: higher income sample

Variable	Child support		In-kind support		Visitation	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
<i>Economic factors</i>						
Mother's employment (weeks worked in last year)	-0.004	0.007	0.003	0.007	-0.003	0.012
Family owns home	-0.266	0.203	-0.105	0.203	-1.063**	0.423
Family received TANF benefits in the last 12 months	0.657	0.580	-0.029	0.528	-0.759	1.089
Family received Food Stamps in the last 12 months	0.148	0.469	0.218	0.460	-0.183	0.785
Income (1000s of dollars in 2001)	0.007**	0.004	0.000	0.002	-0.001	0.003
<i>Demographic factors</i>						
Child characteristics						
Age: 0-5 (omitted category)						
Age: 6-11	0.043	0.303	0.122	0.322	-0.469	0.729
Age: 12-18	0.253	0.352	0.099	0.366	-1.231	0.829
Male	0.061	0.183	0.209	0.187	0.327	0.360
Has fair or poor health	6.383	639.312	-5.815	1057.591	4.652	639.665
Last lived with father: Never lived with father	0.705**	0.331	-0.101	0.310	0.678	0.730
Last lived with father: 3 or fewer years ago (omitted category)						
Last lived with father: 4 or more years ago	0.342	0.253	-0.075	0.251	-0.366	0.618
Last lived with father: Do not know	1.619*	0.897	-0.773	0.747	-0.917	1.055
Characteristics of the child's mother						
Age (years)	-0.005	0.017	0.005	0.018	0.104**	0.043
Race—white	-0.518	0.482	1.894***	0.529	1.312*	0.783
Race—black	-1.794***	0.492	1.357**	0.531	0.885	0.764
Race—other (omitted category)						
Less than high school education	-0.285	0.377	0.356	0.381	1.069	0.944

Table 5 continued

Variable	Child support		In-kind support		Visitation	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
High school education (omitted category)						
Greater than high school education	0.164	0.194	0.193	0.200	0.416	0.350
Currently married	-0.165	0.333	0.418	0.343	0.684	0.622
Currently not married, but cohabitating	0.254	0.402	0.538	0.420	1.489*	0.866
Currently not married and not cohabitating (omitted category)						
Has emotional problems	0.065	1.032	5.169	239.134	8.045	232.786
Has physical problems	-1.511*	0.899	-0.025	1.387	-0.897	20.451
Characteristics of the child's father						
Distance lives from child: 10 miles or less (omitted category)						
Distance lives from child: 10-50 miles	0.443*	0.243	-0.019	0.234	0.907*	0.534
Distance lives from child: More than 50 miles	0.031	0.271	-0.359	0.262	-0.228	0.460
Distance lives from child: Not known	-0.220	0.432	-0.723*	0.415	-2.174***	0.619
Currently married	0.408*	0.215	-0.082	0.206	-0.751***	0.354
Currently not married (omitted category)						
Current marital status not known	-0.475	0.829	-1.281*	0.699	-1.120	0.871
Has had more children	-0.749***	0.240	0.024	0.238	-0.516	0.397
Has not had more children (omitted category)						
Has had more children: Not known	-1.343*	0.810	0.107	0.640	-1.047	0.843
Characteristics of the child's household						
Number of children under age 18	-0.049	0.119	-0.049	0.122	0.409*	0.232
Number of adults (age 18 or older)	-0.619***	0.157	-0.232*	0.145	0.009	0.303

Table 5 continued

Variable	Child support		In-kind support		Visitation	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
<i>Constant</i>	1.980**	0.864	-0.860	0.903	-2.434	1.694
ρ (<i>Std. Err.</i>)						
Child support and in-kind support	0.268** (0.118)					
Child support and visitation	0.316 (0.237)					
In-kind support and visitation	0.669*** (0.169)					

Notes: Higher income is defined as family income at or above 200% of poverty. Unweighted number of children = 318. Weighted regressions using individual weights for the child. Standard errors adjusted for clustering (children from same household). Superscripts of *, **, and *** are used if the *p*-value of the coefficient is less than 0.10, 0.05, or 0.01, respectively.

Full Sample

Examining the values of ρ , we found that all three aspects of nonresident father involvement were positively correlated after controlling for other factors. This indicates that unobserved factors that positively affected the likelihood of one type of involvement by a nonresident father (e.g., visiting), after controlling for other factors, also increased the likelihood of the other types of involvement (e.g., child and in-kind support receipt), and vice versa. In-kind support and visitation were the most strongly correlated after controlling for other factors. Nevertheless, the positive correlations between child support and visitation, and child support and in-kind support were statistically significant as well.

Regarding the determinants of child support receipt, the effects of the economic and demographic factors on whether or not a child received child support indicated that receipt was positively related to having higher income; having a mother who was older or white; and having a nonresident father who lived nearer the child or who was currently married. Factors negatively related to child support receipt included more hours worked by the mother, homeownership, receiving TANF benefits, the child being in fair or poor health, the child's mother being Black, the child's father having other children, and the child residing in a household with more adults. A surprising result was that children who last lived with their father over 3 years ago were more likely to receive child support than those who lived with their father more recently (within the past 3 years). This outcome perhaps reflects the time needed to formalize the payment and receipt of child support (i.e., establish a child support award).

The relationships of the same set of variables with receipt of in-kind support differed from those identified for child support receipt. Maternal education was positively associated with in-kind support receipt. Likewise, more recently living with the father and living closer to the father were related to being more likely to receive in-kind support. If the mother did not know about a characteristic of the father, this was generally related to being less likely to receive in-kind support. Regarding visitation, a child in a household that received food stamps was more likely to visit with his or her father. Other positive factors were having an older mother and residing in a household with more children. Older children, children with fair or poor health, with less educated mothers, who lived with their father less recently (longer than 3 years ago) or lived further away from their father (more than 50 miles) had a reduced likelihood of visitation. As with receiving in-kind support, having a mother who reported not knowing a characteristic of the child's father was generally related to a lower likelihood of the child having visited with the father.

Lower Income Families

Table 4 reports multivariate results for the lower income sample. Examining the values of ρ , similar to the full sample we found a strong positive correlation between in-kind support and visitation after controlling for other factors among lower income families. Positive, but statistically insignificant, relationships of

unobserved factors between child support and in-kind support and child support and visitation also were found.

The effects of the independent variables on child support receipt were similar to those found for the full sample in that any significantly related factor for children in lower income households was significantly related in the same way (positive or negative) in the full sample. Differing from the full sample was finding that among lower income families the following factors were not associated with child support receipt: maternal employment, homeownership, length of time since the child lived with his or her father, the child's mother being Black, distance the child lives from his or her father, the father's current marital status, and whether he has had more children.

The relationships with receipt of in-kind support in the lower income sample also differed from the findings in the full sample. Homeownership was positively related and TANF receipt was negatively related to in-kind support receipt among lower income families. None of the economic factors were associated with in-kind support receipt among all families. Otherwise, factors associated with in-kind support receipt among lower income families were similar to those found in the full sample with two exceptions. Older children (age 12–18) in lower income families were less likely to receive in-kind support. Additionally, having a mother who did not know about characteristics of the father was not related to receipt of in-kind support from the father.

Factors associated with the father were important to visitation among low-income families as was the case with the full sample. Visitation was more likely for children who most recently lived with their father or who lived nearer to their father. Visitation also was more likely if the father was currently married, if the child's mother was older or more educated, or if the child's household had less income. As with child support receipt, the likelihood of visitation was reduced if the child had fair or poor health. As one might expect, the less the child's mother knew about the child's father, the less likely the child visited with his or her father.

Higher Income Families

Table 5 reports results for the higher income sample. Examining the values of ρ , similar to the full sample and the sample of lower income families, we found with the higher income sample a strong positive correlation between in-kind support and visitation after controlling for other factors. Unlike the low-income sample, a statistically significant positive relationship of unobserved factors between child support and in-kind support also was found. Similar to the low-income sample, the relationship of unobserved factors between child support and visitation among higher income families was statistically insignificant.

Factors associated with child support receipt for higher income families differed from those for lower income families. While receiving child support was positively related to having higher income just as with lower income families, receipt was not associated with TANF receipt as it was with lower income families as few higher income families received public assistance benefits. Child support receipt also was positively associated with having a nonresident father who lived nearer to the child

or who was currently married. Negatively related to the receipt of child support was the child's mother being Black or having physical problems, the father having had more children, and the child residing in a household with more adults. Interestingly, while having a mother who did not know about characteristics of the father was generally related to a reduced likelihood of child support receipt, a child who never lived with his or her father or a child having a mother who did not know if they had lived together was more likely to have received child support.

Few factors were related to in-kind support receipt or visitation in the higher income sample. None of the economic factors were associated with receiving in-kind support. The children with mothers who were neither White nor Black were less likely to receive in-kind support, as were children with mothers who knew less about the child's father. Regarding visitation, the child's family owning their home was associated with a lower likelihood of visitation, while the child's mother being older, White or being in a cohabitating relationship, and the child's household having more children were related to a greater probability of visitation. The child living nearer to his or her father also was related to greater visitation. Visitation was less likely if the father was currently married or if the child's mother did not know where the father lived.

Conclusions

This is the first detailed quantitative analysis of support received by custodial mothers from nonresident fathers that specifically examines interrelationships among child support, in-kind support, and visitation using a nationally representative sample. Relative to what is known about the receipt of child support, there has been very little research on the receipt of in-kind support, visitation, and the relationships between these important aspects of nonresident father involvement. A second contribution of this study is that we analyze these relationships for both lower income (family income below 200% of poverty) and higher income (family income at or above 200% of poverty) families to understand how these relationships vary by the income level of the child's resident family.

Our examination of data from a sample of children with nonresident fathers from the Child Development Supplement of the Panel Study of Income Dynamics finds that these dimensions of involvement are highly intertwined and have different sets of determinants that vary by resident family income. Table 6 summarizes our primary results and provides comparisons across the lower and higher income samples. Economic characteristics of the resident household are more frequently associated with the receipt of child support, as opposed to the receipt of in-kind support or with visitation. Impacts of economic characteristics vary across income samples. For example, the positive association between resident family income and child support receipt is greater for lower income families compared to higher income families. The associations between resident family income and visitation, however, are such that for resident families in the lower income sample the relationship is negative while the relationship for higher income families is statistically insignificant. Demographic characteristics of the child, mother, father

Table 6 Summary of determinants of receipt of child support, receipt of in-kind support, and visitation

Variable	Child support	In-kind support	Visitation
<i>Economic factors</i>			
Mother's employment (weeks worked in last year)	A		
Family owns home	A		B
Family received TANF benefits in the last 12 months	A, C		
Family received Food Stamps in the last 12 months			A
Income (1000s of dollars in 2001)	A, B		C
<i>Demographic factors</i>			
Child characteristics			
Age: 0–5 (omitted category)			
Age: 6–11			
Age: 12–18			A
Male			
Has fair or poor health	A		A
Last lived with father: Never lived with father		A	C
Last lived with father: 3 or fewer years ago (omitted category)			
Last lived with father: 4 or more years ago	A	A	A
Last lived with father: Do not know	A	A	A
Characteristics of the child's mother			
Age (years)	A, B		A
Race—white	A, B	C	
Race—black	A, B	C	
Race—other (omitted category)			
Less than high school education		A	A, C
High school education (omitted category)			
Greater than high school education		A	
Currently married			
Currently not married, but cohabitating			
Currently not married and not cohabitating (omitted category)			
Has emotional problems			
Has physical problems	B		
Characteristics of the child's father			
Distance lives from child: 10 miles or less (omitted category)			
Distance lives from child: 10–50 miles	A		
Distance lives from child: More than 50 miles		A	A, C
Distance lives from child: Not known		A	A
Currently married	A		B
Currently not married (omitted category)			
Current marital status not known		A	A

Table 6 continued

Variable	Child support	In-kind support	Visitation
Has had more children	A, B		
Has not had more children (omitted category)			
Has had more children: Not known	B		
Characteristics of the child's household			
Number of children under age 18			A
Number of adults (age 18 or older)	A		
ρ			
Child support and in-kind support	A		
Child support and visitation	A		
In-kind support and visitation	A		

Notes: An 'A' indicates that the p -value of the coefficient is less than 0.10 for the full sample. A 'B' indicates that the coefficient for the lower income sample is significantly greater than the coefficient for the higher income sample at least at the 0.10 level. A 'C' indicates that the coefficient for the higher income sample is significantly greater than the coefficient for the lower income sample at least at the 0.10 level.

and resident household are related to all aspects of nonresident father involvement. Generally speaking, when differences in impacts across income groups are observed, the differences are related to the receipt of child support. Fewer differences are observed with regard to in-kind support receipt or with visitation.

Results from our trivariate probit models also indicate that unobserved factors are generally positively correlated across the three dimensions of involvement after controlling for a wide variety of economic and demographic factors. The strongest association is for the receipt of in-kind support and visitation which is positive and statistically significant for all three (full, lower income and higher income) samples. This positive association may reflect underlying characteristics of the father such as the degree to which he is a responsible parent or is family-oriented, or the quality of the relationship between the father and the child or between the child's father and mother. Our findings are consistent with Nepomnyaschy (2007) and Seltzer and Schaeffer (2001) who suggest that a stronger positive relationship exists between visitation and support provided by a nonresident father when that support is made informally to the child's mother.

Results related to in-kind support and child support vary for lower income and higher income families. The statistically significant positive relationship among higher income families is consistent with the hypothesis that nonresident fathers who are involved with their children tend to be involved in multiple ways. That is, these forms of support are complementary rather than substitutes. Our findings are consistent with smaller studies conducted by Rangarajan and Gleason (1998) and Seltzer and Schaeffer (2001). The relationship for lower income families is positive as well, but statistically insignificant.

The correlation between child support and visitation is weakest. As noted above, much of the discretion in paying child support has been removed from nonresident parents with the expansion of automatic wage withholding and other automated payment mechanisms (Bartfeld and Meyer 2003; Office of Child Support Enforcement 2004). Perhaps this has weakened the link between child support and visitation for many nonresident fathers. Future research, however, may wish to discern between formal and informal cash child support to more fully understand this relationship.

In summary, father involvement is important to children's lives (Amato and Gilbreth 1999; Buchanan et al. 1996; Coley 2003; Coley and Chase-Lansdale 1999; Stewart 2003) and, as such, is encouraged through social policy (e.g., Office of Child Support Enforcement 2004; Roberts 2006). This research demonstrates that dimensions of nonresident father involvement are complex. Future research needs to address the circumstances of nonresident fathers and how these circumstances affect their visitation and support provision choices. Future work also should continue to focus on identifying causal pathways between child support, in-kind support, and visitation, and to examine the heterogeneity among nonresident fathers and among resident mothers, especially across income groups. Furthermore, research is needed regarding the types of in-kind support they provide. Likewise, more needs to be known about potential sequences related to these three types of involvement. For instance, are mothers who receive less or no in-kind support more likely to pursue receipt of cash child support? This additional research is needed in order to develop policies that facilitate all aspects of involvement and address the multiple issues that affect the relationships between nonresident parents and their children.

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