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Family developmental risk factors among adolescents with disabilities and children of parents with disabilities

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Abstract

This paper investigates how the learning environments and family dynamics differ if households have a child with a disability or a parent with a disability. Using data from the National Longitudinal Survey of Youth 1997, results indicate that children with disabilities experience similar learning environments as other children, but have somewhat weaker relationships with their parents. In two-parent families, maternal disability lowers parents' school involvement and is associated with a less enriching home environment. Paternal disability reduces maternal monitoring and positive family activities possibly because mothers divert care-giving resources from their children to their male partners. Children in mother-headed households experience learning environments and family dynamics that are similar regardless of their own disability status or that of their mothers, but these outcomes are markedly inferior to those of children growing up in two-parent households. Future research on adolescent development should consider the disability status of children and parents, with particular attention to patterns of gendered care-giving in American families.

Keywords

Disability; Family ecology; Family dynamics; Family functioning; Adolescents; Disability of parents; Disability of adolescents

Introduction

Research on child development and well-being consistently emphasizes the link between family dynamics and adolescent outcomes. But providing the optimal family dynamics for adolescent development is more difficult for families with fewer resources (Hogan & Msall, 2002). A special case of resource scarcity may be situations in which parents have disabilities that are associated with lower incomes and limitations in functioning that could affect the ability to parent. Additional resources may also be necessary to optimize family dynamics for children with disabilities, especially in situations in which the disability is severely limiting and requires intensive medical and rehabilitation services. This paper

investigates the family developmental risk factors among children with disabilities and children of parents with disabilities.

Several theoretical frameworks inform our consideration of the inter-relatedness of individual-level disability, family level dynamics, and neighborhood-level characteristics. Bronfenbrenner's (1979) ecological model emphasizes the importance of the interconnection between various contexts for adolescent developmental processes. Under this framework, multiple levels of behavior settings produce nested contexts in which circumstances in one context can moderate the impact of another context, leading to multidirectional influences across interactions and environments (Bronfenbrenner, 1999; McLeroy, Bibeau, Steckler, & Glanz, 1988). In particular, such indicators of family processes as resources for learning, routine family activities, parent-child relationships, and parenting styles are expected to systematically vary by demographic factors, socioeconomic situation, parental family structure and children's living arrangements. Disability status may influence both individuals' experiences within the family environment as well as the way other family members perceive available household resources.

Numerous facets of children's immediate home environment are important in shaping children's experience within the family. Parental status, marital conflict and distress, maternal and paternal human capital, and financial resources have all been associated with youth emotional adjustment, mental health, and educational attainment (Bronfenbrenner, 1979; Halloran, Ross, & Carey, 2002; Vandervalk, Spruijt, de Goede, Meeus, & Maas, 2004).

Psychologists emphasize the importance of a sense of belonging to a family as important for future youth success (Henry & Lovelace, 1995; O'Connor, Hetherington, & Clingempeel, 1997). Family routines are important for this sense of belonging and are associated with positive educational and behavioral outcomes among school-age children (Maccoby & Mnookin, 1992).

Parent-youth interaction also has an important impact on child and adolescent outcomes. Positive youth satisfaction with the parent-child relationship is associated with higher academic motivation, achievement, and engagement (Hair et al., 2005) as well as improved social skills (Engels, Finkenauer, Meeus, & Dekovic, 2001; Zahn-Waxler & Smith, 1992), decreased substance use (Blum & Rinehart, 1997; Cohen & Richardson, 1994), and lower sexual risk (Jackson, Henriksen, Dickinson, Messer, & Robertson, 1998). Greater levels of age-appropriate parental monitoring (how much parents know about their children's activities, friends, and behaviors) is associated with lower rates of sexual behavior (Hogan & Kitagawa, 1985; Metzler, Noell, Biglan, Ary, & Smolkowski, 1994), drug, alcohol and tobacco use (Chassin, Curran, Hussong, & Colder, 1996; Jackson et al., 1998; Miller, 1998), and the increased likelihood of academic success and social well-being (Crouter, MacDermid, McHale, & Perry-Jenkins, 1990; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Eddy, Reid, & Fetrow, 2000). Recent research cautions that reported parental monitoring, measured in the conventional fashion, may be a better indicator of whether a child discloses his/her activities to parents than an indicator of actual parental

supervision (Stattin & Kerr, 2000). In this research, we will interpret the “monitoring” variable with attention to both possible meanings.

A second level of intermediate influences such as demographic and socioeconomic factors also informs family dynamics and is important in estimating family risk. Poverty status has been linked to differing levels of parental monitoring and support (Sampson & Laub, 1994). Parental education and socioeconomic status is associated with the presence of enriching resources (McLoyd, 1998), and family structure is linked to the perceived quality of youth–parent relationships, supportiveness, and degree of monitoring (Cookston, 1999; Hoffman, 1995; White, 1994).

Children with disabilities often require more extensive medical services and greater family resources than children without special health care needs, making the family environment especially crucial to the healthy development and the well-being of children who have disabilities. Much of the responsibility for integrating children with disabilities into school and community life is contingent upon family care-giving and support, yet research has shown that children with disabilities grow up in family environments that are more often single-parent homes, in poverty, and lower in socioeconomic status, further increasing their developmental risks (Hogan, Rogers, & Msall, 2000; Rogers & Hogan, 2003). Grandparents are less likely to provide assistance to their grandchildren with disabilities (Park, Hogan, & D'Ottavi, 2005). Furthermore, adolescents with serious disabilities often experience decreased family socioeconomic resources which hinder the successful early adult transitions (Wells, Sandefur, & Hogan, 2004).

Another factor complicating parenting may be the disability of the mother or father. A parent with a disability may lack the financial ability to maintain an educationally enriching physical environment. Physical limitations may make them less able to participate in their children's school program and activities. It may be difficult for a mother or a father with a disability to effectively monitor their children's behavior. Based on the 2000 Census which includes measures of serious disabilities, Avery and Hogan (2006) estimate that about 13.0% of children without disabilities and one-third of children with disabilities grow up in families in which at least one parent is disabled, making parental disability a considerable influence in the lives of many adolescent children.

The presence of a parent with a disability may also affect the gendered division of care in the household. Gordon and Perrone's (2004) research on spousal care-giving suggests that the additional demands on time and energy related to having a partner with a chronic illness may exacerbate caregiver burden and affect other family roles and responsibilities. Because mothers are often responsible for most of the care-giving and domestic labor in the household (Braithwaite, 1986; Coltrane, 2000), the presence of a father figure with a disability may place additional strain on a mother's ability to provide family resources. Conversely, mothers with disabilities may find it more difficult than mothers without disabilities to sustain a positive developmental environment for children.

Examining the impact of disability on children's learning environments and family dynamics *in addition to* other common risk factors allows further insight into mechanisms which may

place children at greater developmental risk. Our focus is on using population-based data to examine the impact of disability status of children and the disability status of parents on three aspects of the children's lives that improve their opportunities for learning—a safe and secure neighborhood, parental contact with schools, and the presence of intellectually enriching resources in the home. We refer to these factors as the *learning environment*. We then examine three dimensions of what we call *family dynamics*—positive family routines, parental monitoring of children's behavior, and the strength of parent-child relationship. When referring to both the environment for learning and family dynamics, we refer to the *family environment* for development. We investigate the effects of youth–mother and youth–father interactions separately, in light of the strong gendered division of care-giving and parenting in the United States, and to provide a clear assessment of how the disabilities of parents of each sex impact measures of the family environment for development. By including disability status of the other parent in the analysis of a parent's relationship with their child, we are also able to identify any compensatory parenting that may occur. Finally, we consider two-parent and mother-only households independently for statistical reasons, but also in order to understand any differential pathways of family developmental risk factors that might arise due to family structure.

Data and methods

The National Longitudinal Survey of Youth 1997 (NLSY97) is a nationally representative household-based sample of the non-institutional population of young persons in the United States (Bureau of Labor Statistics, 2005). This is a longitudinal study which annually collects data on an age cohort of children who were ages 12–16 as of December 31, 1996. We utilize Wave I (1997) data in which a parent provided information about the disability status of their child, and adolescent respondents who were ages 12–14 years provided information for the most comprehensive indicators of family environment. Wave I ascertained the disability status of fathers and mothers who were living in the same household as the adolescents (including biological parents in the home, step-parents and adoptive parents, and other mother or father figures). In order to consider how fathers' work disability affect father–child interactions, we do separate analyses for (a) adolescents with both a father-figure and mother-figure present in the household, and (b) adolescents with a mother-figure present in the household but no father-figure present; these families may include a father-figure outside of the household, but we have no information on that parent's disability status. This specification permits us to examine the impact of fathers' disabilities on mothers' abilities to provide a supportive family environment for development.

The sample for this analysis included adolescents ages 12–14 years living with two parent-figures ($N = 3335$) and in families with only mother-figures ($N = 1238$). After excluding cases in which data were missing on any of the disability or control variables, we have 3028 (91%) two-parent youths and 1220 (99%) single-mother youths. Some of the most complex measures of family environment were collected from a sub-sample of the respondents. For these measures the sample sizes were reduced for children in two-parent families ($N = 2780$) and mother-only families ($N = 1110$).

This analysis uses only the cross-sectional data from a single point in time (1997) even though the NLSY97 is a longitudinal study. We do this for several reasons. Some measures of family dynamics are available in subsequent years; information on the parent-child relationship is collected until 1999 and positive family routines and parental monitoring are reported until 2000. However, several other dependent measures of the family environment are only available in the first survey year; including information pertaining to the youth's enriching environment, physical environment, and parental educational involvement. Next, there is substantial missing item response on the dependent measures available in subsequent survey waves. Only 68.4% of the original sample of youth in two-parent families and 67.2% of youth in mother-only families report parental monitoring through 2000. Missing data on time-varying covariates would lead to additional attrition. There is undoubtedly considerable selectivity in the cases that would drop out of the models with a longitudinal specification. Finally, given our focus on family dynamics, a longitudinal analysis would be most informative in allowing us to examine how changes in the independent measures of interest (here, child and parent disability) correspond to changes in the dependent measures of interest. However, because parental work limitations and parent-reported youth disability are only available in 1997, we would not be able to take advantage of these models across time. For these reasons we decided to restrict our analysis to 1997 cross-sectional data.

Measures

Disability

The World Health Organization (2001) developed the International Classification of Functioning, Disability, and Health (ICF) model which describes a person's health and well-being in terms of four components: (1) body structures, (2) body functions, (3) activities, and (4) participation. Population surveys are well-suited to the measurement of limitations in activities and participation (Hogan & Msall, 2006). Activities are tasks, including learning, communicating, walking, carrying, feeding, dressing, toileting, bathing, reading, preparing meals, shopping, washing clothes. Participation refers to age-appropriate involvement in play, school, work, and community life.

Ideally, we would have preferred to have information on limitations in both activities and participation both for children and their parents; we do not. We have information only about activity limitations for children and about work participation limitations for their parents. We know from other work we have done with the 1996 Panel of the Survey of Income and Program Participation and the 2000 Census that many more parents report disabilities that prevent work than report activity limitations. The parents whose disabilities we are missing in this study are those who have an activity limitation but not a work limitation. The omission of these cases is likely to increase the size of the coefficients for the effects of parental disabilities on the family environment for development insofar as we are identifying disabilities that are likely to have the most immediate and serious consequences for family life. The focus in this paper therefore is on the disability status of children measured by activity limitations and the disability status of parents as measured by disability that prevents

employment. The outcome variables are measures of children's learning environments and family dynamics.

Child disability status is constructed from four domains for which parents reported youth activity limitations—learning or emotional disabilities, sensory limitations, physical disabilities, or chronic illnesses associated with disabilities. The small number of children with limitations precludes analyses for each aspect of disability. Therefore, we have abstracted across these variables to determine if a child has one or more severe activity limitations (“currently limited a lot”), or no severe limitation but one or more mild limitations (“currently limited a little”). Remaining children are classified as having one or more past limitations (“not currently limited”) or as having never had limitations. The validity of the disability measure for children was then examined against other indicators associated with special health care needs, including overall health reports, school attendance reports, and histories of remedial learning (tabulations not shown). The constructed measure of youth disability was strongly linked to these related health variables for the entire sample, and for subgroups defined by family structure and ethnicity. The measures of maternal and paternal disability are also from the parent-respondent interviews, with one parent reporting on the disability status of themselves and their partner.

Family environment

The NLSY97 collected data in a survey setting in which limited time prevented the use of extensive standardized psychometric scales; reduced numbers of items for each psychometric scale were collected. We use abbreviated measures based on prior psychometric properties of scale items measuring age-relevant child development processes. The constructs were established as consistent and reliable and indirect validation was done with comparison to other estimated family differentials (Child Trends & Ohio State University Center for Human Resource Research, 1999).

We examine the learning environments for children by using subscales of the Caldwell and Bradley (1984) Home Observation for Measurement of the Environment to measure risk pathways from the home (an index which measures the availability of enriching resources), the neighborhood (a physical environment index which measures troubled community surroundings), and school involvement (an index which measures parental involvement in school activities). The HOME scale is designed to differentiate high risk environments rather than to measure variations in not-at-risk environments; therefore the distribution of values on each subscale was highly skewed with most children *not* living in at-risk settings. For this reason we dichotomize these environments, with children classified as living in a high risk situation if their score is at least one standard deviation below the sample mean. Bivariate logistic regression models predict the likelihood of each aspect of the environment for learning. Coefficients less than one indicate that factor worsens (increases risk) of a poor learning environment.

Family routines is an interval scale formed by summing the number of days per average week in which the family eats together, housework gets done when it is supposed to, something fun is done together as a family, and something religious is done together as a family (Child Trends & Ohio State University Center for Human Resource Research, 1999).

Mothers' and fathers' monitoring of youth behaviors are interval scales formed by summing the responses (0 = knows nothing...4 = knows everything) to four questions about how much the parent knows about close friends, close friends' parents, who the adolescent is with when not at home, and knows about adolescent's teachers and what youth is doing at school (Child Trends & Ohio State University Center for Human Resource Research, 1999).

The parent–youth relationship scale is an interval scale formed by adding the responses to two sets of items: (a) (0 = strongly disagree...4 = strongly agree) on three statements—think highly of parent, would like to be like parent, and really enjoy spending time with parent; and (b) (0 = never...4 = always) on five statements—how often parent praises you for doing well, criticize you or your ideas [reverse code], help you do things important to you, blame you for parent's problems [reverse code], and makes plan with you and cancels for no good reason [reverse code] (Child Trends & Ohio State University Center for Human Resource Research, 1999).

These aspects of family dynamics are analyzed using ordinary least squares regression models. All outcome variables in the model are coded so that a negative coefficient indicates that factor reduces positive family dynamics. A positive regression coefficient for other independent variables indicates a more favorable family environment for children with those particular characteristics. All estimated models control for demographic and socioeconomic factors that are well-established as determinants of the family environment and parenting. We estimate models separately for two-parent and single-parent families. This is done to avoid the under-identification problems that occurred when we tried to estimate a model that included both the measure of father's disability (which needed to include a category for no father present) and family structure (which also needed to include a category for no father present) in the same equation. The estimation of separate models for two-parent and single-parent households allowed us to consider the direct effects (in two-parent households) of fathers' disabilities on mothers' activities in creating a positive home environment.

Results

Descriptive results indicate significant differences between the prevalence of disability in two-parent vs. single-mother households. Ten percent of children have mild disabilities and 2% of children have seriously limiting disabilities in two-parent households (Table 1). Fourteen percent of children have mild disabilities and 4% of children have seriously limiting disabilities in single-mother households. In two-parent households 12% of mothers and 12% of fathers have disabilities. In mother-only households, 19% of mothers have work disabilities.

There are also significant differences between the demographic and socioeconomic characteristics of father and mother families compared to families with a mother but not a father-figure in the household. Thirty-eight percent of two-parent households are in poverty or near poverty whereas 69% of mother-only households are in poverty or near poverty. Ten percent of two-parent families are black, compared to 28% of single mother families. Children in mother-only households live in a poorer physical environment, a less educationally enriching home environment, and experience somewhat less parental

involvement in schools. They also have fewer positive family routines, with less maternal monitoring, and a somewhat poorer mother–child relationship.

Regression results indicate that in two-parent households (Table 2), children from families in which at least one parent has a high school diploma have better learning environments (positive neighborhood environment, enriching home environment, and parents involved in schools). Children with a college-educated parent are even more likely to live in an enriching environment. Even controlling for family socioeconomic resources, children in black and Hispanic families are disadvantaged in their learning environments relative to their white counterparts, with less favorable neighborhoods and less enriching home environments. Somewhat countering this, black parents are more involved in their children's schools than white parents in the two-parent households. Urban residence is associated with a more enriching home environment. Children of multiple and other race/ethnicities have family situations identical to those of whites in two-parent households.

Adolescents whose mothers have a disability have exposure to less enriching home environments, and have parents who are less involved in the schooling of their children. The learning environment available to children with current disabilities is the same as for children without disabilities in two-parent households.

Parental college education is associated with improved parental monitoring and parent–child relationships for both mothers and fathers in two-parent families (Table 3). Among older children who are age 14 and likely to have entered high school, two-parent families' positive family activities, parental monitoring, and parent–child relationships decrease. The child's gender is also important; mothers have lower monitoring of sons compared to daughters, and they have poorer relationships with their sons. Somewhat compensating for this, fathers increase their monitoring and improve their relationships with male children. Additional children in two-parent households increase positive family activities and strengthen paternal monitoring and father–child relationships. Urban residence is associated with reduced family activities and maternal monitoring. Black and Hispanic parents have lower monitoring of their children than whites in two-parent households. Children of multiple and other races have family dynamics that are identical to those of white children. These findings regarding differentials in monitoring are more readily interpreted in terms of parents knowing about their children's activities than as differentials in self-disclosure.

In two-parent families, positive family activities are not affected by the presence of a maternal disability. Mothers with disabilities have similar monitoring and relationships with their children as mothers without disabilities. However, positive family activities are negatively affected by the presence of a paternal disability. When fathers have a disability mothers reduce the monitoring of their children.

Maternal monitoring of children who have disabilities is less in two-parent families. These questions ask about monitoring of activities outside of the home, activities that may be less common among children with disabilities. The style of parenting (uninvolved, permissive, authoritarian, and authoritative) does not differ between children with and without disabilities (models not shown). But we also see that children with disabilities report they

have weaker relationships with their mothers and fathers than other children; children with serious disabilities report less quality relationships with their mothers and children with past and mild disabilities report less quality relationships with their fathers.

In mother-only households (Table 4) children of mothers with a college education have much better access to good learning environments than children whose mothers are less educated. Net of mother's education, poverty is associated with compromised neighborhood and less enriching home environments. Additional children in mother-headed households reduce maternal monitoring, perhaps as a result of time-constraints. Mother-only households in urban residences have lower maternal monitoring and maternal relationships than comparable households in rural residences. Male children are also less monitored, but mothers' relationships with sons do not differ from relationships with daughters.

In single-mother households the disability of the mother does not affect the neighborhood or enriching home environment. Nor are mothers who have disabilities less involved in their children's schooling. Family routines, the mother-child relationship, and monitoring of children are not negatively affected when single mothers have disabilities. Nor does the disability of a child affect any of these dimensions of life. The contrasting results for disability status of mother and of child in mother-only and two-parent households are not simply a function of sample size; there are adequate numbers of cases to provide sound statistical tests.

Conclusions

The learning environments available to children with disabilities are equivalent to those of children without disabilities. Family routines are the same for children with and without current disabilities. Children with disabilities, especially those with the most serious limitations, have reduced maternal monitoring (either because these children when outside of the home are in situations monitored by other adults or because of more general difficulties in parent/child communication), and they have poorer relationships with their mothers. This theme arises in other research using semi-structured personal interviews with mother figures of children receiving physical and occupational therapies because of disabilities (Hogan & Goldscheider, forthcoming). A recurrent theme among these mothers is that fathers frequently become more permissive and sometimes more distant from their children with disabilities. Mothers interpret this as decreasing the child's likelihood of becoming self-sufficient and independent adults. They emphasize the importance of making their children learn to live with their disabilities as they are growing up, rather than doing everything for them. They also are fearful that this works to weaken positive mother-child bonds.

The United States has made a strong policy commitment to the inclusion of all children in age-appropriate activities, including schooling. These results indicate that families take a similar approach to raising children with disabilities—children with mild and serious disabilities are raised by their parents in the much the same learning environments as children without disabilities. We find no evidence to suggest that parents move their

children with disabilities to better neighborhoods or provide them with more enriching home environments. Nor do they increase their involvement in their children's schooling.

The presence of a mother with a disability in two-parent households does affect some aspects of the learning environment. Mothers with disabilities are less involved in their children's schools than mothers without disabilities. Maternal disability also decreases the likelihood of an enriching home environment. However, family dynamics are unaffected as mothers with disabilities monitor their children and maintain strong positive relationships just as well as mothers without disabilities.

The lack of a residential father may lead women in mother-only families to experience additional barriers to providing a supportive family environment. However, we find that the mothers with disabilities in these households do about as well as mothers without disabilities. These mothers may be the only parent figure in their children's lives, making it increasingly important for them to overcome limitations which may impede their ability to provide developmental care.

Previous research has found that children with disabilities often face additional disadvantages when living in single-mother families. Families in which children have disabilities may have somewhat higher rates of marital dissolution than other families, resulting in a higher percentage of children with disabilities in mother-headed households (Hogan & Goldscheider, forthcoming). Furthermore, growing up in a mother-only household is also associated with children having more neonatal complications, (Hogan & Park, 2000), higher hospitalization rates, a greater number of school days missed due to illness and a variety of negative health outcomes (Hogan, Msall, & Drew, 2006).

However, these results also suggest that other factors which increase the care-giving responsibilities of mothers also reduce their ability to provide children with positive family dynamics. The presence of a father with a disability is associated with fewer positive family routines and a reduction in mothers' monitoring of their children. We interpret this as resulting from the increase in maternal care-giving provided to a husband or male partner who has a disability serious enough to limit work.

Paternal disability has little impact on fathers' monitoring or relationship with their children in two-parent households. Furthermore, paternal monitoring and relationships are largely unaffected when a mother figure has a disability. This may imply that father figures are less responsible than mothers for providing positive family dynamics. We find an effect on mother's monitoring when fathers have a disability but no effect on father's family dynamics when mothers have a disability, which may also imply that fathers do not increase care-giving to their wives or female partners with disabilities. Further research would be needed to disentangle the effects of parental disability on the gendered division of care.

A larger number of siblings in the home (which implies greater care-giving responsibilities) do not negatively impact the family environment of children in two-parent households. Instead it seems to suggest a greater parental orientation to family life. Positive family routines more often occur in large families. Fathers are more involved in monitoring their children and have better relationships with their children when there are many children in

the home. In essence, additional numbers of children appear to be subject to some economies of scale, and to the greater interests of fathers in these large families in family life. In mother-only families greater paternal involvement cannot counter the strain on family dynamics that occurs with additional children. But in single-parent households other aspects of family dynamics are unaffected by a larger number of children in the home, again providing suggestive evidence of some economies of scale.

Our findings are also consistent with the interpretation that children are more likely to disclose their behaviors to the same sex parent. We saw in two-parent families that sons were more likely to disclose their behaviors to fathers; when fathers are absent from families it may be especially difficult for mothers to get their sons to self-report their behaviors, especially when any undesirable behaviors are strongly gender-typed. The lower maternal monitoring of children with disabilities may be explained by the lesser ability of children with disabilities to disclose things about their behavior to their parents. In any case, this finding is unlikely to represent an actual lessening of parental attempts to keep their children with disabilities out of trouble.

These results are linked to the gendered nature of care in the United States. Despite some recent efforts at change, women are still expected to be the primary care giver, both for children and for adults in need. Our analyses suggest that mothers, even those with disabilities, are the primary providers of the consistent and sustained learning environments and favorable family dynamics that children need to successfully develop. The maintenance of a positive family environment is more often the province of mothers in two-parent households; when mothers' disabilities keep them from fulfilling these roles it appears that fathers do not fill the gap (as evidenced by the negative coefficients for mother's disability). Further evidence for this is that fathers do not increase their monitoring of children when mothers have disabilities; if they did there would be a positive coefficient for the effects of mothers' disabilities on paternal monitoring.

Research has pointed to the period of midlife in which women are particularly likely to experience stress from the dual care-giving responsibilities for child-rearing and parent care. Some of the women in this study may have such elder-care issues (not measured). In situations in which their husband has a work disability, women with children face another type of dual care-giving. At the same time, many mothers work at jobs outside of the home. Mothers' earnings and benefits are even more important to family economic security when fathers do not work. Women appear to cope with these multiple challenges, but at the cost of being able to provide a somewhat less supportive family environment for their children's development.

The family ecology literature could benefit from more specifically incorporating this gender-specific production of a family environment that facilitates positive youth development. This research also suggests that parental disabilities are critical to the production of such a positive environment for development; the failure to take parental disabilities into account may be biasing the estimated effects of related variables (for example, education level, age of parents, or family income) on the environment for learning and for family functioning.

These results identify several strategic points at which public policy interventions might be useful. The first and most obvious is to assist parents with disabilities in securing a safe and supportive physical home environment for their children. This may include the increased provision of educational and developmental resources within the household and improved availability of positive community support networks within the neighborhood. This is particularly important for mother-only households as we have found significant differences in the overall weaker learning environments and less favorable family dynamics of children of single-mother households compared to two parent households. Speculatively, it is possible that the greater government-supported interventions for medical care and rehabilitation services that can be accessed by single mothers in poverty are ameliorating some of the negative consequences of the disabilities of children. However, greater support mechanisms are clearly still needed to provide children with disabilities in all households the same quality family environments of children without disabilities.

Parent–teacher interaction should also be more collaborative and facilitated by frequent telephone conversations or meetings in more accessible locations outside the school building. Finally, efforts to rehabilitate men with disabilities could incorporate additional counseling in parenting children and assist with family interventions. To the extent that men with disabilities can be taught to be more effective fathers, their own quality of life will increase, their female partners will be able to better handle their complex care-giving responsibilities, and the developmental trajectories of their children will be improved.

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Table 1

Descriptive statistics for independent and dependent variables used in the analysis

Label	Measures	Description of population		
		Two-parent	Single-mother	
<i>Dependent measures—sample means</i>				
Learning environment				
Physical environment	Index which measures safety and security of the child's home, neighborhood, and community	.778	.688***	
Enriching environment	Availability of educationally enriching materials in the household such as books and electronic resources	.722	.517***	
Educational involvement	Parental involvement in educational activities, including attendance of parent–teacher meetings and school participation	.851	.732***	
Family dynamics				
Positive family activities	Weekly frequency of positive family routines such as eating dinner together and family outings	15.350	13.961***	
Parental monitoring	Youth report of level of parental monitoring	Maternal	10.703	9.766***
		Paternal	8.501	
Parental relationship	Youth report of quality of parent youth relationship	Maternal	25.566	24.371***
		Paternal	24.816	
<i>Independent measures—sample proportion</i>				
Disability of child				
	0 = No past or current learning or emotional limitations, sensory disabilities, missing or deformed body parts or chronic illness (<i>reference category</i>)			
Past	1 = Past disability (youth is “not currently limited” with history of disability) vs. reference category	.207	.180*	
Mild	1 = One or more mild disabilities (youth is “limited a little”) vs. reference category	.102	.141**	
Serious	1 = One or more serious disabilities (youth is “limited a lot”) vs. reference category	.021	.040**	
Disability of parent				
	0 = No health limitation (<i>reference category</i>)			
Maternal disability	1 = Long-term health problem or condition which limits type or amount of employment	.122	.194***	
	0 = No health limitation (<i>reference category</i>)			
Paternal disability	1 = Long-term health problem or condition which limits type or amount of employment	.116		
Children in household				
	0 = Focal child is only child in household (<i>reference category</i>)			
1–3 other children	1 = 1–3 other children under 18 in household vs. reference category	.788	.683***	
4 or more other children	1 = 4 or more other children under 18 in household vs. reference category	.043	.066***	
Household poverty				
	0 = More than 200% ratio to poverty level (<i>reference category</i>)			

Label	Measures	Description of population	
		Two-parent	Single-mother
In or near poverty	1 = Less than 200% ratio the poverty level	.379	.687***
Best-educated parent	0 = Less than high school degree and high school degree (<i>reference category</i>)		
High school plus	1 = High school diploma vs. reference category	.269	.285
College degree or higher	1 = College degree/college degree vs. reference category	.362	.190***
Gender			
Female	0 = Child is female (<i>reference category</i>)		
Male	1 = Child is male	.525	.465**
Race/ethnicity			
Black	0 = Child is white, non-black, non-hispanic (<i>reference category</i>); 1 = black	.096	.284***
Hispanic	0 = Child is white, non-black, non-hispanic (<i>reference category</i>); 1 = hispanic	.112	.147
Other/multiple ethnicities	0 = Child is white, non-black, non-hispanic (<i>reference category</i>); 1 = other, multiple ethnicities	.011	.015
Age			
Age 12–13	0 = Child is 12 or 13 years old (<i>reference category</i>)		
Age 14	1 = Child is 14 years old	.324	.371**
Area of residence			
Rural	0 = Rural residency; not living in metropolitan statistical area (<i>reference category</i>)		
Urban	1 = Urban residency; living in metropolitan statistical area	.796	.821
Region			
North	0 = West or mount (<i>reference category</i>); 1 = north	.469	.413
South	0 = West or mount (<i>reference category</i>); 1 = south	.324	.379***

*
 $p < .05$;

**
 $p < .01$;

 $p < .001$.

Table 2
Binary logistic regression of the learning environment for children in two-parent households

	Physical environment			Enriching environment			School involvement		
	Odds ratio	(95% CI)	P	Odds ratio	(95% CI)	P	Odds ratio	(95% CI)	P
Disability of child									
Past vs. none	1.23	(0.98, 1.55)	.077	1.22	(0.98, 1.52)	.080	0.85	(0.66, 1.10)	.227
Mild vs. none	0.98	(0.73, 1.32)	.918	0.90	(0.67, 1.20)	.461	0.96	(0.68, 1.35)	.801
Serious vs. none	1.00	(0.54, 1.85)	.996	0.88	(0.49, 1.58)	.662	0.81	(0.41, 1.57)	.523
Maternal disability									
Limitation vs. no limitation	1.13	(0.87, 1.48)	.370	0.67	(0.53, 0.87)	.002	0.74	(0.56, 0.99)	.047
Paternal disability									
Limitation vs. no limitation	1.02	(0.78, 1.33)	.896	0.90	(0.69, 1.16)	.397	0.78	(0.58, 1.05)	.096
Children in household									
1–3 others vs. only child	0.80	(0.62, 1.01)	.068	1.00	(0.80, 1.26)	.397	1.00	(0.76, 1.32)	.999
4+ others vs. only child	0.86	(0.56, 1.31)	.473	0.85	(0.56, 1.28)	.428	0.77	(0.47, 1.25)	.292
Poverty									
In or near poverty vs. not	0.69	(0.57, 0.84)	.001	0.52	(0.43, 0.62)	.001	0.81	(0.64, 1.01)	.058
Parental education									
HS diploma vs. <HS	1.48	(1.19, 1.83)	.001	1.99	(1.63, 2.44)	.001	1.43	(1.11, 1.85)	.007
College degree vs. <HS	2.39	(1.89, 3.01)	.001	4.88	(3.86, 6.18)	.001	2.32	(1.76, 3.07)	.001
Male									
Male vs. female	0.75	(0.63, 0.90)	.002	0.72	(0.61, 0.86)	.001	0.89	(0.72, 1.09)	.254
Black									
Black vs. white	0.40	(0.32, 0.51)	.001	0.60	(0.47, 0.75)	.001	1.92	(1.37, 2.69)	.001
Hispanic									
Hispanic vs. white	0.69	(0.55, 0.88)	.003	0.47	(0.37, 0.59)	.001	1.25	(0.94, 1.68)	.125
Other									
Other vs. white	1.72	(0.50, 5.90)	.391	3.30	(0.91, 11.95)	.069	1.66	(0.48, 5.72)	.421
Age									
Age 14 vs. 12–13	0.99	(0.82, 1.19)	.927	1.00	(0.84, 1.20)	.982	0.74	(0.60, 0.91)	.005
Urban									
Urban vs. rural	1.11	(0.88, 1.39)	.376	1.36	(1.10, 1.70)	.006	0.90	(0.68, 1.17)	.421
North									
North vs. mount/west	0.99	(0.77, 1.26)	.909	1.13	(0.89, 1.42)	.311	0.92	(0.69, 1.21)	.534
South									
South vs. mount/west	0.72	(0.56, 0.92)	.008	0.97	(0.76, 1.22)	.764	1.07	(0.80, 1.43)	.652
–2 log likelihood	3142.372			3229.117			2433.399		

Source: National Longitudinal Survey of Youth 1997.

CI, confidence interval.

Number = 3028.

Table 3
Ordinary least squares regression of family dynamics for children in two-parent households

	Monitoring						Parent-youth relationship					
	Positive family activities			Maternal			Paternal			Maternal		
	Coeff.	(95% CI)	P	Coeff.	(95% CI)	P	Coeff.	(95% CI)	P	Coeff.	(95% CI)	P
Disability of child												
Past vs. none	-0.54	(-1.03, -0.04)	.033	-0.01	(-0.30, 0.28)	.935	-0.20	(-0.57, 0.18)	.301	-0.14	(-0.59, 0.30)	.526
Mild vs. none	-0.24	(-0.91, 0.42)	.473	-0.44	(-0.83, -0.04)	.030	-0.36	(-0.86, 0.14)	.156	-0.24	(-0.59, -0.35)	.426
Serious vs. none	-0.38	(-1.78, 1.01)	.592	-1.41	(-2.23, -0.58)	.001	-1.02	(-2.07, 0.04)	.058	-1.66	(-2.92, -0.40)	.010
Maternal disability												
Limitation vs. no limitation	0.48	(-0.13, 1.08)	.124	0.10	(-0.26, 0.46)	.583	-0.03	(-0.48, 0.43)	.911	-0.23	(-0.78, 0.32)	.410
Paternal disability												
Limitation vs. no limitation	-1.58	(-2.19, -0.97)	.001	-0.39	(-0.75, -0.03)	.035	-0.12	(-0.58, 0.34)	.599	-0.45	(-1.00, 0.01)	.106
Children in household												
1-3 others vs. only child	1.06	(0.54, 1.58)	.001	0.09	(-0.22, 0.39)	.574	0.48	(0.09, 0.87)	.016	0.20	(-0.26, 0.67)	.395
4 + others vs. only child	2.56	(1.57, 3.54)	.001	0.21	(-0.30, 0.87)	.343	0.72	(-0.03, 1.46)	.059	0.28	(-0.60, 1.17)	.531
Poverty												
In or near poverty vs. not	0.48	(0.06, 0.91)	.026	-0.21	(-0.46, 0.04)	.102	-0.40	(-0.72, -0.08)	.015	-0.13	(-0.52, 0.25)	.495
Parental education												
HS vs. <HS	-0.24	(-0.74, 0.25)	.335	0.05	(-0.25, 0.34)	.753	0.18	(-0.20, 0.55)	.347	0.45	(0.01, 0.90)	.047
College vs. <HS	0.17	(-0.32, 0.66)	.504	0.40	(0.10, 0.69)	.008	0.58	(0.21, 0.95)	.002	0.59	(0.14, 1.03)	.009
Male												
Male vs. female	0.31	(-0.08, 0.69)	.122	-0.61	(-0.84, -0.38)	.001	0.33	(0.04, 0.62)	.027	-0.49	(-0.84, -0.14)	.006
Black												
Black vs. white	-0.03	(-0.60, 0.53)	.912	-0.87	(-1.21, -0.54)	.001	-0.93	(-1.35, -0.50)	.001	-0.40	(-0.91, 0.11)	.122
Hispanic												
Hispanic vs. white	-0.37	(-0.93, 0.19)	.199	-0.51	(-0.84, -0.17)	.003	-0.46	(-0.88, -0.04)	.033	-0.23	(-0.73, 0.27)	.370
Other												
Other vs. white	0.98	(-1.11, 3.06)	.358	-0.49	(-1.73, 0.74)	.435	0.34	(-1.23, 1.92)	.671	-0.04	(-1.92, 1.84)	.967
Age												
Age 14 vs. Age 12-13	-0.70	(-1.11, -0.28)	.001	-0.41	(-0.66, -0.17)	.001	-0.54	(-0.85, -0.23)	.001	-0.69	(-1.06, -0.32)	.001
Urban												
Urban vs. rural	-0.53	(-1.03, -0.02)	.041	-0.34	(-0.64, -0.04)	.027	-0.30	(-0.68, 0.09)	.129	-0.17	(-0.62, 0.29)	.474
North												
North vs. mount/west	-0.32	(-0.85, 0.20)	.224	-0.08	(-0.39, 0.23)	.625	-0.10	(-0.49, 0.30)	.634	-0.23	(-0.70, 0.24)	.333
South												
South vs. mount/west	-0.12	(-0.66, 0.42)	.655	0.07	(-0.25, 0.39)	.682	0.09	(-0.32, 0.49)	.682	0.06	(-0.42, 0.55)	.800
Intercept	15.18	(14.31, 16.05)	.001	11.51	(11.00, 12.03)	.001	8.44	(7.79, 9.10)	.001	26.014	(25.23, 26.80)	.001
R ²	.033			.045			.032			.019		.031

Source: National Longitudinal Survey of Youth 1997.

CI, confidence interval.

Number = 2780.

Table 4
Binary logistic regression of the learning environment and ordinary least squares regression of the learning environment and family dynamics for children in single-mother households

	Physical environment ^a			Enriching environment ^a			School involvement ^a			Positive family activities ^b			Maternal monitoring ^b			Maternal relationship ^b		
	OR	(95% CI)	P	OR	(95% CI)	P	OR	(95% CI)	P	Coeff.	(95% CI)	P	Coeff.	(95% CI)	P	Coeff.	(95% CI)	P
Disability of child																		
	0.95	(0.66, 1.35)	.757	0.99	(0.71, 1.39)	.963	1.30	(0.89, 1.91)	.171	0.01	(-0.86, 1.06)	.841	0.39	(-0.15, 0.94)	.154	-0.17	(-1.00, 0.65)	.678
	0.66	(0.45, 0.97)	.032	1.11	(0.77, 1.61)	.584	0.96	(0.65, 1.43)	.848	0.49	(-0.59, 1.58)	.372	-0.11	(-0.72, 0.50)	.723	-0.03	(-0.96, 0.90)	.956
	0.81	(0.43, 1.55)	.531	0.84	(0.44, 1.60)	.588	0.66	(0.35, 1.25)	.205	0.52	(-1.28, 2.32)	.568	-0.11	(-1.13, 0.91)	.834	-0.49	(-2.04, 1.05)	.533
Maternal disability																		
	0.90	(0.66, 1.23)	.503	1.05	(0.77, 1.43)	.775	0.86	(0.62, 1.19)	.351	0.51	(-0.37, 1.40)	.257	0.16	(-0.34, 0.66)	.540	0.19	(-0.57, 0.95)	.623
Children in household																		
	0.92	(0.68, 1.24)	.574	0.77	(0.58, 1.03)	.080	1.01	(0.74, 1.39)	.956	0.20	(-0.65, 1.05)	.641	-0.81	(-1.28, -0.33)	.001	-0.25	(-0.97, 0.48)	.504
	0.34	(0.20, 0.56)	.001	0.77	(0.47, 1.26)	.300	1.09	(0.65, 1.84)	.741	0.85	(-0.55, 2.26)	.233	-0.94	(-1.73, -0.15)	.020	-0.68	(-1.88, 0.52)	.267
Poverty																		
	0.56	(0.40, 0.80)	.001	0.60	(0.44, 0.84)	.002	0.99	(0.65, 1.84)	.946	-0.07	(-0.98, 0.85)	.887	0.01	(-0.50, 0.53)	.955	-0.54	(-1.33, 0.25)	.180
Maternal education																		
	1.17	(0.85, 1.59)	.339	1.91	(1.43, 2.56)	.001	1.29	(0.93, 1.78)	.127	-0.68	(-1.56, 0.19)	.124	0.10	(-0.39, 0.59)	.693	0.32	(-0.43, 1.07)	.400
	1.48	(0.99, 2.22)	.057	4.29	(2.92, 6.30)	.001	3.85	(2.32, 6.39)	.001	0.47	(-0.60, 1.54)	.391	1.08	(0.47, 1.68)	.001	0.67	(-0.25, 1.58)	.155
Male																		
	0.85	(0.66, 1.09)	.191	0.73	(0.57, 0.93)	.010	1.28	(0.98, 1.67)	.069	0.46	(-0.24, 1.16)	.194	-0.72	(-1.11, -0.32)	.001	-0.21	(-0.81, 0.40)	.502
Black																		
	0.25	(0.18, 0.35)	.001	0.73	(0.54, 1.00)	.047	1.58	(1.13, 2.22)	.008	0.61	(-0.28, 1.50)	.177	-0.10	(-0.61, 0.40)	.686	-0.05	(-0.81, 0.72)	.903
Hispanic																		
	0.50	(0.34, 0.73)	.001	0.51	(0.36, 0.74)	.001	1.07	(0.73, 1.57)	.742	0.36	(-0.71, 1.43)	.512	0.25	(-0.36, 0.85)	.425	0.14	(-0.78, 1.06)	.763
Multiple ethnicities																		
	1.16	(0.24, 5.59)	.857	0.56	(0.15, 2.05)	.380	0.39	(0.11, 1.40)	.150	-0.71	(-4.45, 3.02)	.708	-0.40	(-2.51, 1.71)	.711	0.61	(-2.60, 3.82)	.709
Age																		
	0.88	(0.68, 1.14)	.320	0.72	(0.53, 0.97)	.037	0.85	(0.65, 1.11)	.240	-1.21	(-1.94, -0.48)	.001	-1.03	(-1.44, -0.61)	.001	-1.23	(-1.86, -0.61)	.001
Urban																		
	0.82	(0.58, 1.18)	.299	1.47	(1.05, 2.06)	.027	1.09	(0.77, 1.57)	.622	-0.19	(-1.15, 0.78)	.707	-0.74	(-1.29, -0.19)	.008	-0.52	(-1.35, 0.31)	.216
North																		
	0.74	(0.51, 1.08)	.117	0.88	(0.61, 1.25)	.463	1.17	(0.80, 1.70)	.418	0.47	(-0.56, 1.50)	.370	0.47	(-0.11, 1.06)	.110	-0.39	(-1.27, 0.50)	.391
South																		

	Physical environment ^a			Enriching environment ^a			School involvement ^a			Positive family activities ^b			Maternal monitoring ^b			Maternal relationship ^b		
	OR	(95% CI)	P	OR	(95% CI)	P	OR	(95% CI)	P	Coeff.	(95% CI)	P	Coeff.	(95% CI)	P	Coeff.	(95% CI)	P
Intercept	−2 log likelihood: 1438.899			−2 log likelihood: 1518.845			−2 log likelihood: 1636.464			13.58	(11.87, 15.29)	.001	11.08	(10.11, 12.05)	.001	25.75	(24.28, 27.22)	.001
										R ² : .023			R ² : .066			R ² : .026		

Source: National Longitudinal Survey of Youth 1997.

OR, odds ratio; CI, confidence interval.

^aNumber= 1220.

^bNumber= 1110.