

**Parental Investment in Childhood and Later Adult Well-Being:
Can Greater Parental Involvement Mediate the Effects of Socioeconomic Disadvantage?***

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**Parental Investment in Childhood and Later Adult Well-Being:
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Parental involvement is important for later well-being since it conveys to children that parents are interested in their development. In socioeconomically disadvantaged homes this involvement becomes even more important. This paper asks: Can the social capital produced by greater parental involvement mediate some of the harmful effects of less financial capital? Data are from the National Child Development Study; a longitudinal study of children born in Britain in 1958. Results suggest that parental involvement does matter, but it depends on when involvement and economic hardship are measured, as well as type of involvement and parent gender. Father interest in education reduces the impact of economic hardship on education the most, especially at age 11. Both father and mother interest in school at age 16 have the largest direct impact on education. The frequency of outings with mother at age 11 also has a larger direct impact on education than outings with father, however, neither compare with the reduction in the effect of economic hardship as a result of father interest in school.

Keywords: social capital; parental involvement; education; financial disadvantage; Britain

1. Introduction

Parental involvement in their children's lives can have a lasting impact on well-being. More involved parents convey to their children that they are interested in their development and well being. This in turn signals to the child, both directly and indirectly, that their future is valued. Thus, the relationships between parents and children, coupled with the influence from other resources, go a long way to ensuring future success. Later outcomes in adulthood such as education (Flouri and Buchanan 2004; Hobcraft 1998), benefit receipt, and social housing (Hobcraft 1998; Sigle-Rushton 2004) are influenced by parental investment in childhood. Positive effects are also noted for more immediate outcomes in adolescence, such as less police contact (Flouri and Buchanan 2002a), relationships with parents (Flouri and Buchanan 2002b), educational test scores (Ho Sui-Chu and Willms 1996; McNeal 1999, 2001) and behavior (Sacker, Schoon, and Bartley 2002).

The long term connection between parental involvement and later adult outcomes is especially important for children experiencing economic hardship. This link between childhood disadvantage and later adult disadvantage is well-established (Duncan and Brooks-Gunn 1997; Duncan, Yeung, Brooks-Gunn, and Smith 1998; Harper, Marcus, and Moore 2003; Hobcraft 1998). The lack of resources does not afford these children as many options for educational opportunities, and also for increased exposure to higher educated adult role models, thus the experience of economic disadvantage regularly carries over into the next generation. Unfortunately these economically deficient families are the very ones that need extra support not contingent upon monetary factors; however, they all too often lack the various other forms of capital as well.

2. Past Research on Socioeconomic Status, Parental Involvement and Later Outcomes

Past research suggests that a positive relationship exists between socioeconomic status and parental involvement (Astone and McLanahan 1991; Ho Sui-Chu and Willms 1996; Lareau 1987; McNeal 1999, 2001) and between parental education level and time spent with children (Sayer, Gauthier, and Furstenberg 2004). Parents of high socioeconomic status are more involved in their children's education, which is likely due to a greater comfort and familiarity with the educational system (Ho Sui-Chu and Willms 1996; Lareau 1987). Thus, these children not only benefit from greater parental financial resources, they also receive an additional advantage of having parents who know how to negotiate the world of education.

At the same time, the relationship between childhood disadvantage and parental involvement on well-being varies depending on the age at which disadvantage is measured, the age when support/involvement is considered, the type of support/involvement being given, and also the parent that is giving the support. Poverty during childhood is harmful at all ages (Hobcraft 1998); however, it is more deleterious at certain ages. For example, familial poverty during early and middle childhood was found to be much more important for determining ability and achievement than poverty in adolescence (Duncan and Brooks-Gunn 1997; Duncan et al. 1998). Age at when parental support and involvement is measured is also important for the developmental life course (Bronfenbrenner 1986). As children age and become more exposed to outside influences from school and peers they become more independent, and the relationship between parent and child changes over time. This is uncovered in research which suggests that over time parents' involvement may decrease (Crosnoe 2001; Muller 1998).

The type of support/involvement is related to conceptual issues regarding social or cultural capital (Ho Sui-Chu and Willms 1996; Lareau 1987; McNeal 2001, 1999). Of specific

interest are measures related to the amount of time parents spend with their children, the type of activities they share, the relationship quality between parents and children, and parental contact with the school system. For example, the amount of time and activities that parents and children spend together are important for strengthening the parent-child bond, which in turn can increase the chance that children will heed the advice of their parents as it pertains to education. Certain activities such as reading to the child, are important for not only increasing their vocabulary, but for also distilling the idea that reading and education in general are important. Greater parent contact with the school system in turn suggests that parents are interested in their child's education; however, it may also indicate poorer student performance (Izzo, Weissberg, Kaspro, and Fendrich 1999). In any event, greater contact with school, whether for positive or negative reasons, does proxy for increased social control through increased monitoring (McNeal 1999, 2001).

Lastly, questions surrounding distinctive parental contact by mother and father may involve issues of gender role socialization and traditional values towards educational attainment. Are mothers or fathers more supportive and more involved? Is the support of one versus the other more beneficial? Using a British sample, Flouri and Buchanan (2004) found that mother's involvement at age 7 had a stronger impact on a child's later educational attainment. Similarly, Hobcraft (1998) found consistent support for the idea that parental support is important for later socioeconomic success. However, he found that father's involvement was especially important for educational outcomes for both boys and girls, whereas mother's involvement was a more consistent predictor for women on outcomes such as risk of teen parenthood. The discrepancy between these two studies is due to a difference of involvement measures. Hobcraft (1998) focused exclusively on parental interest in school, while Flouri and Buchanan (2004) combined

measures on parental interest in school with indicators of how often each parent took the child on outings and read to them, as well as whether the father shares equally with the raising of the child.

In this paper, I use the National Child Development Study (NCDS) to explore the above issues and examine the relationship between parental interest/involvement and socioeconomic disadvantage in childhood, and later educational attainment. I aim to contribute to the growing research on parental involvement by tackling the issue of whether more interested parents can intervene between the harmful effects of living in impoverished circumstances and later educational attainment. Moreover, I analyze the relationship from multiple sources (parents, teachers, and students), and at multiple time points in childhood, as well as specifically testing whether mother or father involvement matters more at these different stages.

3. Theoretical Framework: Parental Involvement as Social Capital

The social capital framework has been used to further the notion that children's human capital can be increased through parental investment embedded within important relationships (Coleman 1988; Portes 1998). Coleman (1988: S100) identified social capital to be crucial for educational success. He proposed that social capital "comes about through changes in the relations among persons that facilitate action." It exists in relationships and therefore is less tangible than either financial or human capital, but it is still equally important for later socioeconomic success. Portes (1998: 6) suggests that within the literature "the consensus is ...that social capital stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures." Thus, social capital is a useful framework to analyze the link between parent-child relationships, poverty, and later adult socioeconomic status.

Specifically, I utilize the notion of ‘parental involvement as social capital’ proposed by McNeal (1999). He suggests that parental involvement can be conceptualized as social capital because it involves dyadic relationships between the parent and child, or between parents and teachers. These dyadic relationships are often indicative of extended social networks that act as potential sanctioning agents for maintaining the norm of investment and caring for children. At the same time, these external linkages are a sign of the resources available to the family from outside sources, in addition to those resources (physical, human, and cultural) within the familial network. McNeal (1999) proposes that parent involvement can be measured by parent-child discussion, parent involvement in parent-teacher organizations, monitoring, and more direct parent involvement in school activities (such as speaking to a teacher or counselor). There has been some inconsistency with the operational definition of parental involvement (Fan and Chen 2001), however a great deal of common ground among parental involvement measures does exist (Grolnick and Slowiaczek 1994; Harris, Furstenberg and Marmer 1998; Harris and Marmer 1996; McNeal 1999).

Greater parental involvement should indicate greater interest in the child’s future and therefore be positively associated with shorter-term academic achievement as well as with longer term socioeconomic success (Fan and Chen 2001). Ho Sui-Chu and Willms (1996) found that greater parental involvement at home and at school increased math and reading achievement in high school. McNeal (1999) as well found that parent involvement in general reduces truancy and dropping out but has inconsistent effects on achievement. For example, parental involvement in parent-teacher organizations (PTO) and parental monitoring not only reduced the chance of truancy and dropping out, but educational achievement as well. This last result brings forth the issue that high parental interest could indicate children who have more difficulty in

school because parents may show more interest in a child that is having trouble (see Epstein 1988; Horn and West 1992). Nevertheless, greater parental involvement does signal that parents play a larger role in their children's lives, and when the involvement is concerned with their schooling, it becomes particularly relevant for later educational attainment.

4. Further Thoughts on the Link Between Childhood Disadvantage and Parental Involvement

Financial hardship early in the life course has consequences not only during childhood but also extending later in life. Growing up disadvantaged impairs early socioemotional adjustment, as well as cognitive and behavioral development (Chase-Lansdale and Brooks-Gunn 1995; Duncan and Brooks-Gunn 1997). However, given a lack of economic resources parents may use other tools at their disposal to further the development of their children. By stressing the importance of education, parents of lower socioeconomic status may be able to offset the lack of resources.

Past research has discovered a link between childhood socioeconomic status and parental involvement. There are two separate ways the association has been explored, the first examined how parental involvement operates at different levels of socioeconomic status, and the second is concerned with the ability of poor families to use involvement to make up for a lack of socioeconomic resources. While these issues are interrelated the method for analyzing them is somewhat different. The first approach is best exemplified by making a distinction between social and/or cultural capital by level of socioeconomic status. For example, McNeal (2001) examined whether social and cultural capital operate equally for high and low socioeconomic status. He found that parental involvement is more important at higher levels of socioeconomic status. Interaction terms showed that while parent-child discussion, involvement in parent-teacher organizations, and monitoring are generally effective for reducing the odds of truancy

and dropping out, they are more protective at higher levels of socioeconomic status. Thus, McNeal suggested that the effect of social capital is not equitably distributed and some of its positive influences only persist for members of traditionally advantaged sections of the population.

Similarly, Teachman, Paasch and Carver (1997) interacted parental income with a measure of parent-child contact, as well as with parent-school contact. They found that the positive effect of parental income on educational attainment is enhanced when both parent-child and parent-school contact is high. Thus, they suggest that parents who are more involved with their children and schools have children who are less likely to drop out of high school. This in turn is especially true at higher income levels. Lareau (1987) explains the above relationship by proposing that higher socioeconomic status parents are better at navigating the educational system because they are more familiar with the jargon, and are also more likely to have had a greater involvement with the educational system themselves.

The second approach can take on two different forms, the first as exemplified by Harris and Marmer (1996) estimates separate models by poverty status. They found that parental involvement varied by whether the family experienced poverty. For example, fathers of poorer teens were less emotionally and physically involved than fathers of nonpoor teens. Interestingly, this same pattern was not found for mother involvement. Maternal behavioral involvement tended to have stronger effects for education in poorer families, and was even more important than father involvement in nonpoor families. Thus, the Harris and Marmer study reaffirms that parental involvement benefits children, but the effects might vary by whether the child grew up in poverty. Moreover, other research examines the link between poverty, parental involvement, and adult disadvantage on samples selected especially because they are socioeconomically

disadvantaged. For example, Furstenberg and Hughes (1995) used a relatively at-risk sample of African American teenage mothers living in Baltimore and found that maternal support increased the likelihood of graduating from high school as well as greater labor force attachment. Especially important was the mother's involvement in school activities.

The second form illustrated by De Civita, Pagani, Vitaro, and Tremblay (2004) is surprisingly less common. In this type of research, concerns regarding mediation are brought to the forefront. In other words, the question becomes: does parental interest/involvement act as an intervening variable between childhood poverty and some later outcome. De Civita et al. used a longitudinal sample of children in Quebec to test whether mothers' educational aspirations mediated the effect of family income on child academic performance. They found that controlling on mother's aspirations for her child's education decreased the harmful effect of poverty on academic performance. The decline was not absolute and an effect still remained. Their results however reveal that higher levels of maternal aspirations lowered the likelihood of academic problems by almost 50%.

In this paper, I utilize this last approach and seek to understand whether parental involvement acts as a mediating factor between economic disadvantage in childhood and later well-being. The link between parental involvement at differing levels of socioeconomic status is important but past literature has already established this fact. Thus, I take the notion of inconsistent levels of social capital by level of socioeconomic as given and instead attempt to show how parental involvement intervenes between early disadvantage and disadvantage in adulthood.

The major research question to be answered in this paper is: Can parental involvement act as a mediator between childhood financial disadvantage and education? Several sub-questions

also are to be addressed. First, does the effect vary depending on when financial disadvantage and involvement are measured? Some research for example finds that poverty earlier in childhood is most detrimental (Duncan et al. 1998). Meanwhile, the relationship between children and parents changes as the child ages both in terms of the level and type of support, therefore the effect may change as well. Second, does the type of support given make a difference? For example, are activities that the parents and children share or the interest that parents show towards their schooling equally valid and influential? Third, does the gender of the parent matter? Do children respond differently to mother and father support? Past research suggests that the interest shown by mothers differs from that shown by fathers (see Harris et al. 1998; Harris and Marmer 1996).

5. Data and Research Methods

This study used data from the National Child Development Study (NCDS), a longitudinal study of children born throughout Britain in one week of March 1958. Over 17,000 mothers were originally interviewed, representing 98 percent of all births that occurred in that week. Follow-up interviews were conducted when the cohort members were aged 7, 11, 16, 23, 33, and 42. The strength of using these data for examining parental interest in childhood is that relatively good measures of parental interest and parent-child relationship quality exist for all three childhood waves. Moreover, survey points in mid-adulthood afford the researcher the unique ability to determine if long-term benefits accumulate for children who had interested and involved parents. Past research using these data would suggest that this is likely the case (see Flouri and Buchanan 2004; Hobcraft 1998; and Sacker et al. 2002).

Several data restrictions are placed on the original NCDS data. First, the sample is restricted to cohort members who were born into two parent homes and whose parents did not

divorce or separate before age 16.¹ Not surprisingly this restriction reduced the sample dramatically from 18558 to 7530. Next, since the outcome of interest is in adulthood the sample is further restricted to individuals with valid information on education at age 33. This further reduced the sample to 5621. As a result of these restrictions the amount of missing data per variable is drastically reduced. The remaining missing information, which fluctuates by variable (between 1% and 10%), was subsequently removed as well. Moreover, I allow the amount of missing data on the parental involvement measures to vary between waves at age 11 and age 16, and so any subsequent descriptive statistics are given separately. The final sample size used in estimations is 3072 when considering age 7 financial hardship and age 11 parental involvement, and 2658 when taking into account age 11 financial hardship and age 16 parental involvement. The specifics of this design will be discussed further momentarily.

5.1. Measures

5.1.1. Respondent's Education

The adult socioeconomic status measure is educational attainment. It is measured as a dichotomy asking whether the respondent had no educational qualifications versus having some by age 33.² In the United Kingdom students either leave school at age 16 or they take exams that allow them to continue their studies, and to eventually go on to college or university. Thus, having no qualifications suggests that the cohort member took no exams post age 16, and therefore did not go on to further education. In the North American context, therefore, this measure of no qualifications loosely translates into the completion of high school. While this

¹ This was necessary to simplify the meaning of parental support from non-resident parents (typically fathers). In other words, in cases where a high degree of spousal conflict preceded the break-up, or the post-separation relationship is poor and ex-spousal conflict is high due to issues of time and monetary transfers, the mother's view of the father's involvement may be tainted (King and Heard 1999). Other work examining parental involvement has utilized a similar approach (see Amato and Rivera 1999; Harris et al. 1998; Harris and Marmer 1996).

² I explored other specifications of the education variable, including a more continuous measure of years of education, as well as splitting beyond high school into further categories. I found that the most interesting findings, however, occurred at the current split of no educational qualifications versus some educational qualifications.

data set has measures of other adult outcomes (such as living in public housing, being in receipt of benefits, or being unemployed), I chose education because it often proxies for other measures of adult socioeconomic status. In fact being without any educational qualifications is quite highly correlated to other indicators of adult disadvantage. Using the NCDS Makepeace et al (2003) showed that about 10% of those individuals with no qualifications experienced unemployment spells of longer than two years between age 16 and 30, while only about 2% with higher levels of education experienced the same level of unemployment.

5.1.2. Financial Hardship in Childhood

Family economic disadvantage is measured at age 7 and age 11. It is not measured in an objective sense such as income, but is gauged by measures that capture whether the family was experiencing ‘financial difficulty.’ It is measured differently at age 7 and age 11. At age 7 a health visitor reported on a number of difficulties families face, with financial difficulties being one of these. At age 11 parents responded directly to the question ‘have you been seriously troubled by financial hardship in the last 12 months’.

As seen in Table 1 approximately four and a half percent of the sample experienced financial hardship at age 7, while by age 11 this figure was slightly more than eight percent. Furthermore cohort members who experienced financial hardship at either of these ages were more likely to be without educational qualifications by age 33. For example, about fifteen percent of individuals who had no qualifications had experienced financial hardship at age 7, while only about three percent with some qualifications did at the same age. The same pattern holds for hardship at age 11.³

--Table 1 about here--

³ These ‘static’ measures of financial disadvantage at each age are not perfect indicators of the full extent of time spent in disadvantage during childhood. However, there appears to be continuity regarding economic hardship at both these age points: slightly over a third of the sample that were financially disadvantaged at age 7 were also disadvantaged at age 11.

5.1.3. Parental Involvement in Childhood

Parental involvement is measured at age 11 and age 16. At age 11, I measure it in two ways: first, parental interest in education is assessed by teachers and second the parent's response to a question on how often they go on outings with their child. At age 16, there is an identical interest in education measure, but no comparable indicator about outings with parents. Instead at age 16, I use an indicator of how well the teen and the parent 'get along with' one another as assessed by the teens themselves.

The measures of parental interest in school (asked of the teacher) use the following scale: very/overly interested, some interest, and little interest. Frequency of parental outings is asked of the parents (usually the mother) and assessed by the following question: "How often do you take your child out for walks, outings, picnics and visits?" The response categories are hardly ever, occasionally, and most weeks. Lastly, the teen at age 16 is asked to respond to the statement "I get on well with my mother/father" using the following response categories: very untrue/untrue, uncertain, true and very true. Cases where the teen said that they were 'uncertain' were left in the analysis and ordered immediately after 'very untrue/untrue' because saying 'uncertain' suggests a potentially negative relationship.⁴

As seen in Table 1 the average levels of parental involvement vary substantially by later educational attainment. For instance, for cohort members with no qualifications the average level of father interest in education at age 11 was 0.53, whereas the average level was 1.35 for their counterparts with some qualifications. The same relationship is noted for fathers and

⁴ In separate analyses these age specific items were combined into summated scales since the individual items are essentially tapping the same thing: the relationship quality between mothers and children and between fathers and children. However, combining measures from different sources can introduce bias. For example, parents, teachers and adolescents may not rate parental involvement similarly. I explored this issue further by running factor analyses on all age specific items (including both mother and father items together). Two factors were identified at each age, those answered by teachers loaded on one factor, while those from parents or from adolescents loaded on the other, which suggests that combining the items into the same scale may introduce undue bias. Therefore, I opted to keep the parental involvement measures separate, which has the added benefit of allowing for the independent assessment of particular types of support.

mothers across all involvement indicators except for how well parent and teen get along at age 16. For this latter measure the average is slightly higher for those who have qualifications but the difference from those who have no qualifications is not significant.

5.1.4. Childhood Controls

I control for a wide range of factors prior to age 7, as well as at each specific childhood age. Many of the measures span across several childhood waves and I have combined them to reduce collinearity. For example, across several waves the measures of owner-occupied homes have correlations close to 0.85. These multiple wave measures are added together and higher values indicate a greater number of occurrences across the childhood waves.

The controls are from the parental/household level as well as the child level. At the family/household level, I control for parental information such as the age of the parents at the birth of the child, the age when the parents left school, and the social class of the father (with this latter measure several waves of information are pooled together). Specifically at the household level, I include measures related to home ownership (pooled across several childhood waves), number of people in the household, and household residential mobility. These last two measures are used as proxies for resource dilution (Downey 1995), and a loss of social capital (Coleman 1988; Pribesh and Downey 1999; Teachman et al. 1997), respectively.

At the child level, I control on gender, as well as behavior (aggression and anxiety) and reading ability which are assessed at multiple childhood waves. The behavioral and reading measures are meant to tap into potential indirect behavioral factors that may affect qualifications as well as more direct routes through reading ability. The behavioral measures are dichotomized to capture high aggression and high anxiety using scales derived from Rutter, Tizard and Whitmore (1970) (see Hobcraft 1998 for earlier derivatives of these variables). Reading ability

is assessed slightly differently at each age: at age 7 and 11 it is teacher rated, while at age 11 a measure of scoring poorly on a reading comprehension test is used.

Table 2 presents all control variables separately by analysis, which is necessary because each uses slightly different samples (due to a difference in missing on parental involvement). Also, each analysis uses slightly different control variables. The analysis that examines the link between age 7 financial disadvantage and age 11 parental involvement only includes control measures that occur at or before age 11. The analysis that looks at the link between age 11 financial disadvantage and age 16 interest includes control measures for age 16 as well. From Table 2 we see that the proportions are comparable for the two samples. Since the current sample is restricted to individuals who lived in intact homes at age 7, 11 and 16 it is likely slightly less disadvantaged than other samples drawn from these data (Hobcraft 1998).

--Table 2 about here--

5.2. Sample Design

The analysis proceeded in two steps. First the link between financial disadvantage at age 7 and education is examined while considering father and mother involvement at age 11, and second the relationship is moved forward to adolescence where the link between disadvantage at age 11 and education is examined with respect to father and mother involvement at age 16. Setting up the analysis in this way allows for testing the effects of financial disadvantage and parental involvement at two developmental periods (middle childhood and adolescence), as well as for explicitly testing to see whether parental involvement acts as a mediator between earlier disadvantage and educational attainment. The dependent variable is dichotomous (no educational qualifications by age 33); therefore logistic regression is used. Odds ratios are reported in all tables.

Several different model specifications are utilized. First, to assess whether parental involvement has an effect on the relationship between childhood disadvantage and the likelihood of having no qualifications, I ran a model without the interest measure included. Next, parental involvement is introduced to the analysis. Each type of parental involvement is added separately in order to assess whether the type of involvement matters. Also, mother and father involvement are not included in the same models in order to test the independent input of each and to assess which parent has a greater influence on the relationship between childhood poverty and later education. Another approach is to combine mother and father involvement. Harris et al. (1998) interacted mother and father involvement (their measures had moderate correlations ranging from .15 to .44), and found no significant interaction terms, which suggests that the effects of father involvement may not vary by the level of mother involvement.⁵

6. Results

6.1. Financial Disadvantage at Age 7, Parental Involvement at Age 11, and Qualifications

Tables 3 and 4 present the logistic regression estimates (across seven different specifications) for age 7 financial disadvantage, parental involvement at age 11, and all controls on the likelihood of no having qualifications. As seen in Table 3 the effect of disadvantage at age 7 on the likelihood of having no qualifications is very high in the bivariate case with an odds ratio greater than 6 (Equation 1). The fact that the effect is strong even at the bivariate level shows how salient an indicator this is for later socioeconomic disadvantage in adulthood.

Furthermore, Wald tests show that the disadvantage odds ratio drops significantly from 6.4 to 3.2

⁵ Meanwhile, in results not shown, I also interacted mother and father involvement. In most cases the interaction terms were not significant, however, there was a weak negative effect of combined mother and father interest in education at age 16 on the risk of having no qualifications. However, since mother and father involvement are highly correlated (correlations near .9) subsequent models should combine both taking this high collinearity into account, however that is left to further work; most likely using structural equation modeling techniques in order to properly model the shared variation, as well the latent structure of these measures (Bollen 1989).

when father interest in education is added in Equation 2. However, mother's interest in education does not appear to be as important. Table 4 shows that when mother interest in education is added the financial disadvantage odds ratio drops to 4.3 in Equation 2, but the drop is not significant. Further evidence that father interest in education at age 11 is more important than mother interest is the much lower AIC value in Equation 2 of Table 3, versus Equation 2 in Table 4.⁶ Likelihood ratio tests however show that Equation 2 (in Tables 3 and 4) significantly improves the fit from Equation 1 for both mother and father interest in school.

--Tables 3 and 4 about here--

The frequency of outings also decreases the disadvantage odds ratio (Equation 1 versus Equation 4), however, the drop is not significant for either mother or father outings. Thus, mother and father outings seem to have very similar effects on the relationship between financial disadvantage and qualifications, whereas father interest in education definitely stood out as being more important. Very similar AIC values from Equation 4 in Tables 3 and 4 also supports this position.

Also noteworthy is the significant direct positive effect of each of the involvement measures on education. Equation 7 in Tables 3 and 4 shows that in terms of interest in education father interest is more important than mother interest (59% decrease in the odds versus a 44% decrease, respectively). However, a somewhat different pattern emerges for level of outings: with each increase in the level of mother outings at age 11 the odds of having no qualifications decreases by 29%, whereas the same level of father outings decreases the odds by 23%. These results point to the notion that investment in children may be stronger depending on the activity

⁶ Akaike's Information Criterion (Akaike 1973) is a measure used to compare models across different samples or to compare non-nested models. All else being equal, a model with a lower AIC is assumed to be the better fitting model (Long and Freese 2001).

or interest each parent shows: father's interest in education and mother's frequency of outings at age 11 seem to be most important.

While parental interest was influential in reducing the effect of financial disadvantage (especially father interest in education), the largest drop in the disadvantage odds ratio, not surprisingly, comes from adding all the control variables (in Equations 3, 5 and 7). Extensive controls used from birth, age 7, and age 11 completely cancelled out the effect of disadvantage on later education. Tables 3 and 4 show that the most important predictors of later education are father's social class and living in owner-occupied homes during childhood, as well as the child's gender, level of aggression, and especially reading ability. However, the parental involvement measures were important and a significant improvement in model fit was noted when they were added to the model with the control measures only (Equations 3 and 5 vs. Equation 6).

However, what happens as children age? Does the effect of financial disadvantage remain as strong? Does parental involvement still matter as much once they reach adolescence? To address these questions, I move onto the second phase of the analysis and look at the effect that parental involvement at age 16 has on the relationship between age 11 disadvantage and later education.

6.2. Financial Disadvantage at Age 11, Parental Involvement at Age 16, and Qualifications

Tables 5 and 6 present the logistic regression results (across seven different specifications) showing estimates of age 11 financial disadvantage, parental involvement at age 16 and all controls on the likelihood of no qualifications. As with the previous results, a very large effect of disadvantage on later education is noted. In the bivariate case (Equation 1) there is greater than a 300% increase in the odds of having no qualifications if the family was experiencing financial disadvantage at age 11. This odds ratio is smaller than it was at age 7

suggesting that perhaps economic deprivation at age 7 is more harmful to later education than it is at age 11.

--Tables 5 and 6 about here--

At this later developmental stage Wald tests reveal a very large and significant drop in the disadvantage odds ratio after including father interest in education, falling significantly from 3.5 to 2.1 (Equation 1 to Equation 2). However, mother interest in education again does not significantly reduce the disadvantage effect. But in both cases, Equation 2 which includes either father or mother interest in education does significantly improve the overall fit of the model, as indicated by likelihood ratio tests. At the same time, father and mother interest in education at age 16 seem to have more comparable effects on the disadvantage–qualifications link, than parental interest in education at age 11.⁷ This is further supported by much more similar AIC values than was noted with interest at age 11 (see Equation 2 from Tables 5 and 6).

In terms of the direct effects of parental interest in school on qualifications, they are larger at age 16 than they were at age 11. For example, in Equation 7 (Table 3) the odds ratio for father interest in school at age 11 was 0.41, whereas it is 0.32 at age 16 (Table 5). For mother interest in school the difference in the direct impact is even more dramatic with an odds ratio of 0.56 at age 11 (see Table 4) and 0.37 at age 16 (see Table 6). This is suggestive of a potential recency effect, that is, interest at age 16 is closer to the time that these individuals would have been thinking of leaving school and so more interest shown at age 16 may be especially important. Lastly, note the nonsignificance of the ‘get along with’ measures. Apparently, how

⁷ When father interest in school at age 11 was included age 7 disadvantage increased the odds of no qualifications by 261%, while it was increased by 333% by including mother interest in school at age 11. In contrast, at age 16 when father interest in school was included age 11 disadvantage increased the odds of no qualifications by 106%, and was only increased by 127% when mother interest was incorporated.

well parents and teens get along with one another at age 16 does not matter for educational attainment, at least when measured in this way.

Similar to the previous section, the effect of financial disadvantage is significantly reduced by the controls for family background and individual attributes at age 7, 11 and 16. It drops to about 1.2, and is no longer significant. Important control factors common to both father and mother involvement models are gender, the number of people in the household and especially reading ability throughout childhood.

7. Discussion

In this paper parental involvement was conceptualized as an indicator of social capital, and the goal was to address the question ‘Can parental involvement act as a mediator between childhood financial disadvantage and education?’ The current results add to the literature on the transmission of intergenerational disadvantage by suggesting that parental involvement can act as a valuable source of familial social capital that operates to reduce the harmful effect of economic disadvantage in childhood. The disadvantaged families in this dataset were able to compensate for some of the detrimental effects of a lack of resources by making up for it through increased involvement. The impact of parental involvement, however, was by no means universal across all ages, type of involvement, or mother and father. At the same time, parental involvement was not sufficient to completely cancel the negative association between economic disadvantage and education; instead it acted as a ‘partial’ mediator (Baron and Kenney 1986).

In terms of age differences, descriptively the mean level of parental interest in school (the only involvement measure exactly the same at two time points) increased for both parents between age 11 and age 16 indicating that as children progress in school their parents become

more interested (on average). This is different than what some past research has suggested. Izzo et al. (1999) for example found that frequency of parental contact with teachers as well as parental participation at school declined over a three year period. Their study examined children in kindergarten through to third grade and its relevance to older ages remains to be seen however. More relevant perhaps is the study by Muller (1998). Using a sample of American youth between grades 8 and 10 she found that average levels of parental involvement either increased or decreased depending on the measures used: attendance at school meetings decreased, whereas talking about school increased. The current measure is still somewhat different from this since it taps into the teachers' perception of the parents' interest which is most likely observed from parent-teacher contact.

Nevertheless in the current study, parental involvement/interest had a different effect on the disadvantage-education link depending on the age it was measured. For example, parental interest in school at age 11 (especially that from fathers) had a stronger effect on reducing the effect of financial disadvantage than interest in school at age 16. This finding is particularly salient since there was a greater direct effect of disadvantage at age 7 than at age 11. Being able to reduce the effect of early financial disadvantage is especially important since early poverty has been found to be especially detrimental to later well-being (Duncan et al. 1998). In addition, parental interest in education at age 16 had a more pervasive *direct* effect on reducing the odds of no qualifications than earlier interest at age 11. This likely points to a recency effect since the dependent measure is meant to tap into individuals who are leaving school at or shortly after age 16. In other words, the interest shown by parents at age 16 is probably more important for their children staying in school than the interest shown at age 11.

Also important was the type of parental involvement. Parental interest in school as rated by the teacher was the most important measure of involvement, surpassing frequency of outings, and how well parents and teen got along at age 16. This finding is not too surprising when the outcome is one of an educational nature. Measures tapping more direct parent-school linkages should be more applicable to an education outcome. Several other studies also confirm the importance of similar parent-school measures on education related outcomes (Ho Sui-Chu and Willms 1996; Izzo et al. 1999; McNeal 1999; Muller 1998). In contrast, Harris and Marmer (1996) point to the importance of variables measuring closeness or emotional involvement between parents and children, but suggest that these relationships are better at predicting more behavioral measures such as depression and delinquency. Given these latter findings the current null effect of how well the parents and teen get along with one another is not entirely surprising. To strengthen this position, some analyses (not shown) indicate that the current ‘get along with’ measures are also more related to behavioral outcomes such as police contact at age 16. For example, a higher proportion of teens got in trouble with the police at age 16 who said ‘untrue/very untrue’ to getting along with their parents.

Different effects were also witnessed depending on the parent that provided the interest, which is not surprising since other research has also uncovered gender differences (see Flouri and Buchanan 2004; Harris and Marmer 1996; Hobcraft 1998). In the current work it appears that father interest in education at age 11 had a greater impact on reducing the effect of age 7 disadvantage than mother interest at age 11. This difference still remains for age 16, but is not as strong, suggesting that by adolescence the support given by parents has similar effects. Meanwhile, a stronger direct effect of mother outings on qualifications was noticed. A low frequency of mother outings at age 11 had a slightly stronger impact than father outings on

increasing the probability of having no qualifications. Other work suggests that fathers from nonpoor families are more instrumental for educational achievement, while mothers in poor families may play a larger role (Harris and Marmer 1996). Hobcraft (1998) as well found that father interest in school was important for later education; however this contradicts Flouri and Buchanan (2004) who discovered that mother involvement was more important. The current results add to these past studies and furthers our understanding of the link between mother and father interest, childhood financial disadvantage and later education. Mother and father interest do have somewhat different effects and much of it depends on the type of involvement being measured: father interest in school appears to be particularly relevant while it is mother's involvement in other activities that are important.

In closing, in terms of social capital theory, investment in social capital through greater parental involvement during childhood can have a beneficial impact on reducing the long-term effect of childhood disadvantage. The parents in this sample have been able to reduce the impact of financial disadvantage by either showing a greater interest in education or by increasing the frequency of outings. Thus, greater social capital is generated through more acceptance of the education system or by strengthening the bond with their children. For this educational outcome at least, it is the interest shown in the education system that is most important. Past work by McNeal (1999) also supports this claim since he found that increased involvement in parent-teacher organizations significantly reduced the risk of dropping out of school.

Meanwhile, the long-term impact of father involvement (particularly the interest in school) cannot be overemphasized, especially as a mediator of early socioeconomic disadvantage. Thus, paternal support is very important for building social capital for the accumulation of human capital in the next generation. However, it must be noted that while the

effect of financial disadvantage on education was reduced by parental involvement it was not completely diluted suggesting that other factors beyond social capital are important. Future research should explore the way in which parental involvement operates through these other factors at the child level as well as the household level. Nonetheless, the present results are promising because they suggest that over the long-term parents can make up for the lack of financial resources during their child's life by being more involved in their education, both at age 11 and age 16. The current research also points to a need for further exploration into why father's interest in school is important, yet it is maternal behaviors such as frequency of outings that are most influential. Knowing the optimal ways that fathers and mothers can compensate for a lack of socioeconomic resources can aid in reducing the intergenerational transmission of disadvantage.

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TABLE 1: Mean Levels of Parental Involvement and Financial Disadvantage by Educational Attainment

	Full Sample	Qualifications [†]	
		None	Some
Financially Disadvantaged at Age 7 (1=yes, 0=no)	0.046 (5621)	0.154* (579)	0.034 (5042)
Financially Disadvantaged at Age 11 (1=yes, 0=no)	0.083 (5621)	0.206* (579)	0.069 (5042)
Father Interest in School, Age 11 <i>(0=little interest, 1=some interest, 2=very interested)</i>	1.27 (3952)	0.531* (371)	1.35 (3581)
Mother Interest in School, Age 11 <i>(0=little interest, 1=some interest, 2=very interested)</i>	1.12 (4710)	0.647* (459)	1.17 (4251)
Frequency of Father Outings, Age 11 <i>(0=hardly ever, 1=occasionally, 2=most weeks)</i>	1.47 (5583)	1.20* (571)	1.50 (5012)
Frequency of Mother Outings, Age 11 <i>(0=hardly ever, 1=occasionally, 2=most weeks)</i>	1.52 (5593)	1.27* (575)	1.55 (5018)
Father Interest in School, Age 16 <i>(0=little interest, 1=some interest, 2=very interested)</i>	1.32 (3714)	0.497* (312)	1.40 (3402)
Mother Interest in School, Age 16 <i>(0=little interest, 1=some interest, 2=very interested)</i>	1.36 (3988)	0.663* (353)	1.43 (3635)
Does child get along well with Father, Age 16? <i>(0=untrue/very untrue, 1=uncertain, 2=true, 3=very true)</i>	2.12 (4765)	2.07 (412)	2.12 (4353)
Does child get along well with Mother, Age 16? <i>(0=untrue/very untrue, 1=uncertain, 2=true, 3=very true)</i>	2.26 (4770)	2.23 (415)	2.27 (4355)

* Indicates a significant difference between education groups at .01 level.

[†] Not including missing on Qualifications which varies from 1222 to 1904 depending on the variable.

Restricted to intact families from birth to age 16 and only valid information on educational outcome. Respective sample sizes in parentheses below means.

TABLE 2: Variable Definitions, and Means for Both Samples. NCDS Intact Families Birth to Age 16

Variable	Definition	Means in Both Samples	
		Disadvantage 7, Interest 11 (n=3072)	Disadvantage 11, Interest 16 (n=2658)
<u>Financial Disadvantage</u>			
Disadvantaged at Age 7	Health Visitor reported that the family was having ‘financial difficulties’ (1,0)	0.042	-----
Disadvantaged at Age 11	The parents reported that they were having ‘financial difficulty’ in the past year (1,0)	-----	0.064
<u>Parental Involvement</u>			
Father Interest in School, Age 11	Father’s interest in the child’s school, as assessed by the teacher (0=little interest, 1=some interest, 2=very interested/overly interested)	1.285	----
Mother Interest in School, Age 11	Mother’s interest in the child’s school, as assessed by the teacher (0=little interest, 1=some interest, 2=very interested/overly interested)	1.237	----
Frequency of Outings with Father, Age 11	Parents are asked the question “How often does the father/father figure take the child out for walks, outings, picnics & visits?” (0=hardly ever, 1=occasionally, 2=most weeks)	1.493	----
Frequency of Outings with Mother, Age 11	Parents are asked the question “How often does the mother/mother figure take the child out for walks, outings, picnics & visits?” (0=hardly ever, 1=occasionally, 2=most weeks)	1.537	----
Father Interest in School, Age 16	Father’s interest in the child’s school, as assessed by the teacher (0=little interest, 1=some interest, 2=very interested/overly interested)	----	1.365
Mother Interest in School, Age 16	Mother’s interest in the child’s school, as assessed by the teacher (0=little interest, 1=some interest, 2=very interested/overly interested)	----	1.410
Getting Along with Father, Age 16	The teen is asked to respond to the statement “I get on well with my father” using the response categories: very untrue/untrue=0, uncertain=1, true=2, very true=3	----	2.147
Getting Along with Mother, Age 16	The teen is asked to respond to the statement “I get on well with my mother” using the response categories: very untrue/untrue=0, uncertain=1, true=2, very true=3	----	2.273
<u>Parental/Household Measures</u>			
Young Parents at Birth	Both parents were young (Father <age 25; Mother <age 23) at the birth of the respondent (1,0)	0.094	0.095
Father Left School at Young Age	Father/Father figure left school prior to age 15 (1,0)	0.561	0.560
Mother Left School at Young Age	Mother/Mother figure left school prior to age 15 (1,0)	0.459	0.448
Low Father Social Class	Father was employed in a semi- or un-skilled manual occupation (1,0)		
Birth - Age 11	Number of waves between birth and Age 11 with low father social class (0 – 3)	0.519	-----
Birth - Age 16	Number of waves between birth and Age 16 with low father social class (0 – 4)	-----	0.585

TABLE 2: Variable Definitions, and Means for Both Samples. Intact Families Birth to Age 16, continued

Variable	Definition	Means in Both Samples	
		Disadvantage 7, Interest 11 (n=3072)	Disadvantage 11, Interest 16 (n=2658)
<u>Parental/Household Measures</u>			
Owner-Occupied Home	Family lived in an owner occupied home, versus public and privately rented housing (1,0)		
Age 7 - Age 11	Number of waves between Age 7 and Age 11 in an owner-occupied home (0 – 2)	1.03	-----
Age 7 - Age 16	Number of waves between Age 7 and Age 11 in an owner-occupied home (0 – 3)	-----	1.65
Number in Household	Number of People in the Household (0 to 8)		
Age 7 - Age 11	Average number of people in the household between age 7 and age 11 (2.5 – 8)	4.94	-----
Age 7 - Age 16	Average number of people in the household between age 7 and age 16 (2.7 – 8)	-----	4.83
Residential Mobility			
Birth - Age 11	Number of times family moved from birth to age 11 (0 – 9)	1.31	-----
Birth - Age 16	Number of times family moved from birth to age 16 (0 – 9)	-----	1.52
<u>Child Level Measures</u>			
Sex	Respondent is Male (1,0)	0.497	0.495
High Child Aggression	Parents were asked to rate whether their child fought with other children, were irritable, destructive, or disobedient (scale is frequently, sometimes or never). Items were summated, Range is 0-8. High aggression is defined having a score of 4 to 8 (\approx 75 th percentile). (1,0)		
Age 7 - Age 11	Number of waves that the child had high aggression, age 7 to age 11 (0 – 2).	0.224	-----
Age 7 - Age 16	Number of waves that the child had high aggression, age 7 to age 16 (0 – 3).	-----	0.238
High Child Anxiety	Parents were asked to rate whether their child was a worrier, a loner, miserable or tearful, or afraid of new situations (scale is frequently, sometimes or never). Items were summated, Range is 0-8. High anxiety is defined having a score of 4 to 8 (\approx 75 th percentile). (1,0)		
Age 7 - Age 11	Number of waves that the child had high anxiety, age 7 to age 11 (0 – 2).	0.347	-----
Age 7 - Age 16	Number of waves that the child had high anxiety, age 7 to age 16 (0 – 3).	-----	0.447
Poor Reading Ability	At age 7: Teacher rated respondent as being a poor reader, as compared to average and above average readers (1,0). At age 11: Child scored in lowest quartile on reading comprehension test (1,0). At age 16: Child's English reading ability is considered below average by teacher (1,0)		
Age 7 -Age 11	Number of waves that the child was a poor reader, age 7 to age 11 (0 – 2)	0.300	-----
Age 7 - Age 16	Number of waves that the child was a poor reader, age 7 to age 16 (0 – 3)	-----	0.409

TABLE 3: The Impact of Financial Disadvantage at Age 7 and Paternal Involvement at Age 11 on Likelihood of Having No Qualifications (Odds Ratios)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Family Experienced Financial Difficulty, Age 7	6.361*** (1.264)	<i>3.161***</i> (0.371)	<i>1.265</i> (0.322)	5.279*** (1.077)	<i>1.450</i> (0.363)	<i>1.488</i> (0.371)	<i>1.252</i> (0.320)
Father Interest in Education, Age 11		0.232*** (0.023)	0.402*** (0.046)				0.414*** (0.047)
Frequency of Father Outings with Child, Age 11				0.518*** (0.051)	0.691*** (0.077)		0.772** (0.087)
<u>Parent/Household Measures</u>							
Young Parents at Birth			1.498 (0.406)		1.851** (0.494)	1.802** (0.479)	1.521 (0.413)
Father Left School at Young Age			1.362 (0.290)		1.578** (0.329)	1.558** (0.324)	1.382 (0.294)
Mother Left School at Young Age			1.428*** (0.253)		1.474** (0.257)	1.489** (0.260)	1.403* (0.248)
Low Social Class, Measured from Birth to Age 11			1.217*** (0.089)		1.243*** (0.090)	1.255*** (0.091)	1.211*** (0.089)
Owner-Occupied Home, Measured at Age 7 and Age 11			0.739*** (0.071)		0.666*** (0.062)	0.655*** (0.061)	0.744*** (0.071)
Average Number in Household, Age 7 & 11			1.127** (0.063)		1.178*** (0.066)	1.213*** (0.067)	1.105* (0.063)
Number of Times Family Moved, Birth to Age 11			1.034 (0.059)		1.026 (0.058)	1.028 (0.058)	1.033 (0.060)
<u>Child Level Measures</u>							
Cohort Member is Male			0.540*** (0.083)		0.548*** (0.083)	0.544*** (0.082)	0.543*** (0.083)
High Child Aggression, Measured at Age 7 and Age 11			1.319** (0.174)		1.397** (0.182)	1.446*** (0.187)	1.289* (0.171)
High Child Anxiety, Measured at Age 7 and Age 11			0.857 (0.117)		0.830 (0.112)	0.835 (0.112)	0.855 (0.118)
Low Reading Ability, Measured at Age 7 and Age 11			2.693*** (0.264)		3.240*** (0.305)	3.272*** (0.307)	2.691*** (0.264)
LR Chi Square (df)	70.03 (1)	327.30 (2)	520.14 (13)	113.11 (2)	461.80 (13)	450.88 (12)	525.33 (14)
Log Likelihood	-874.62	-745.98	-649.56	-853.08	-678.73	-684.19	-646.97
Pseudo R-Square	0.039	0.180	0.286	0.062	0.254	0.248	0.289
AIC†	1753.24	1497.96	1327.12	1712.16	1385.46	1394.38	1323.94

* p < .10; ** p < .05; *** p < .01 (Standard errors in parentheses). N=3072

† df = k+1, where k is the number of parameters (Standard errors in parentheses).

Financial disadvantage odds ratios in *italics* indicate a significant drop (p < .05) from Equation 1.

TABLE 4: The Impact of Financial Disadvantage at Age 7 and Maternal Involvement at Age 11 on Likelihood of Having No Qualifications (Odds Ratios)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Family Experienced Financial Difficulty, Age 7	6.361*** (1.264)	4.334*** (0.906)	<i>1.372</i> (0.346)	5.219*** (1.067)	<i>1.409</i> (0.353)	<i>1.488</i> (0.371)	<i>1.314</i> (0.333)
Mother Interest in Education, Age 11		0.359*** (0.032)	0.552*** (0.058)				0.563*** (0.059)
Frequency of Mother Outings with Child, Age 11				0.517*** (0.054)	0.678*** (0.080)		0.713*** (0.084)
<u>Parent/Household Measures</u>							
Young Parents at Birth			1.615* (0.432)		1.888** (0.504)	1.802** (0.479)	1.677* (0.450)
Father Left School at Young Age			1.404 (0.294)		1.598** (0.334)	1.558** (0.324)	1.441* (0.303)
Mother Left School at Young Age			1.494** (0.262)		1.476** (0.258)	1.489** (0.260)	1.472** (0.259)
Low Social Class, Measured from Birth to Age 11			1.246*** (0.090)		1.245*** (0.090)	1.255*** (0.091)	1.239*** (0.090)
Owner-Occupied Home, Measured at Age 7 and Age 11			0.700*** (0.071)		0.665*** (0.062)	0.655*** (0.061)	0.707*** (0.067)
Average Number in Household, Age 7 & 11			1.172*** (0.065)		1.181*** (0.066)	1.213*** (0.067)	1.146** (0.064)
Number of Times Family Moved, Birth to Age 11			1.022 (0.058)		1.030 (0.058)	1.028 (0.058)	1.025 (0.059)
<u>Child Level Measures</u>							
Cohort Member is Male			0.544*** (0.083)		0.532*** (0.081)	0.544*** (0.082)	0.533*** (0.082)
High Child Aggression, Measured at Age 7 and Age 11			1.348** (0.178)		1.408*** (0.183)	1.446*** (0.187)	1.322** (0.174)
High Child Anxiety, Measured at Age 7 and Age 11			0.856 (0.116)		0.836 (0.113)	0.835 (0.112)	0.857 (0.117)
Low Reading Ability, Measured at Age 7 and Age 11			2.941*** (0.282)		3.222*** (0.303)	3.272*** (0.307)	2.905*** (0.279)
LR Chi Square (df)	70.03 (1)	217.03 (2)	483.79 (13)	108.21 (2)	461.62 (13)	450.88 (12)	491.89 (14)
Log Likelihood	-874.62	-801.12	-667.74	-855.53	-678.82	-684.19	-663.69
Pseudo R-Square	0.039	0.119	0.266	0.060	0.254	0.248	0.270
AIC [†]	1753.24	1608.24	1363.48	1717.06	1385.64	1394.38	1357.38

* p < .10; ** p < .05; *** p < .01 (Standard errors in parentheses). N=3072

[†] df = k+1, where k is the number of parameters (Standard errors in parentheses).

Financial disadvantage odds ratios in *italics* indicate a significant drop (p < .05) from Equation 1.

TABLE 5: The Impact of Financial Disadvantage at Age 11 and Paternal Involvement at Age 16 on Likelihood of Having No Qualifications (Odds Ratios)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Family Experienced Financial Difficulty, Age 11	3.514*** (0.749)	2.060*** (0.488)	1.066 (0.307)	3.515*** (0.749)	1.167 (0.329)	1.167 (0.328)	1.049 (0.303)
Father Interest in Education, Age 16		0.171*** (0.021)	0.325*** (0.046)				0.319*** (0.046)
Getting Along with Father, Age 16				0.918 (0.083)	1.000 (0.108)		1.120 (0.124)
<u>Parent/Household Measures</u>							
Young Parents at Birth			1.600 (0.508)		1.978** (0.601)	1.978** (0.599)	1.642 (0.523)
Father Left School at Young Age			1.449 (0.374)		1.682** (0.420)	1.682** (0.420)	1.446 (0.374)
Mother Left School at Young Age			1.079 (0.236)		1.107 (0.237)	1.107 (0.236)	1.086 (0.237)
Low Social Class, Measured from Birth to Age 16			1.035 (0.083)		1.061 (0.083)	1.061 (0.083)	1.038 (0.089)
Owner-Occupied Home, Measured at Age 7, Age 11, and Age 16			0.914 (0.074)		0.826** (0.063)	0.826** (0.063)	0.914 (0.074)
Average Number in Household, Age 7, 11 & 16			1.174** (0.089)		1.270*** (0.093)	1.270*** (0.093)	1.178** (0.089)
Number of Times Family Moved, Birth to Age 16			1.030 (0.063)		1.012 (0.060)	1.012 (0.060)	1.036 (0.064)
<u>Child Level Measures</u>							
Cohort Member is Male			0.502*** (0.099)		0.465*** (0.090)	0.465*** (0.090)	0.502*** (0.099)
High Child Aggression, Measured at Age 7, Age 11, and Age 16			1.316* (0.191)		1.363** (0.192)	1.363** (0.191)	1.324* (0.192)
High Child Anxiety, Measured at Age 7, Age 11, and Age 16			0.838 (0.114)		0.795* (0.105)	0.795* (0.105)	0.843 (0.115)
Low Reading Ability, Measured at Age 7, Age 11, and Age 16			3.113*** (0.290)		3.776*** (0.339)	3.776*** (0.339)	3.100*** (0.289)
LR Chi Square (df)	28.38 (1)	293.52 (2)	515.30 (13)	29.27 (2)	446.69 (13)	446.69 (12)	516.37 (14)
Log Likelihood	-659.83	-527.26	-416.37	-659.38	-450.67	-450.67	-415.83
Pseudo R-Square	0.021	0.218	0.382	0.022	0.331	0.331	0.383
AIC [†]	1322.66	1060.52	860.74	1324.76	929.34	927.34	861.66

* p < .10; ** p < .05; *** p < .01 (Standard errors in parentheses). N=2658

[†] df = k+1, where k is the number of parameters (Standard errors in parentheses).

Financial disadvantage odds ratios in *italics* indicate a significant drop (p < .05) from Equation 1.

TABLE 6: The Impact of Financial Disadvantage at Age 11 and Maternal Involvement at Age 16 on Likelihood of Having No Qualifications (Odds Ratios)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Family Experienced Financial Difficulty, Age 11	3.514*** (0.749)	2.273*** (0.533)	<i>1.087</i> (0.314)	3.516*** (0.749)	<i>1.167</i> (0.329)	<i>1.167</i> (0.328)	<i>1.07</i> (0.311)
Mother Interest in Education, Age 16		0.196*** (0.023)	0.375*** (0.052)				0.367*** (0.051)
Getting Along with Mother, Age 16				0.959 (0.099)	1.000 (0.120)		1.142 (0.144)
<u>Parent/Household Measures</u>							
Young Parents at Birth			1.688* (0.530)		1.978** (0.599)	1.978** (0.599)	1.697* (0.533)
Father Left School at Young Age			1.477 (0.379)		1.682** (0.420)	1.682** (0.420)	1.463 (0.376)
Mother Left School at Young Age			1.038 (0.236)		1.107 (0.236)	1.107 (0.236)	1.035 (0.225)
Low Social Class, Measured from Birth to Age 16			1.059 (0.084)		1.061 (0.083)	1.061 (0.083)	1.061 (0.084)
Owner-Occupied Home, Measured at Age 7, Age 11, and Age 16			0.896 (0.072)		0.826** (0.063)	0.826** (0.063)	0.896 (0.072)
Average Number in Household, Age 7, 11 & 16			1.193** (0.090)		1.270*** (0.093)	1.270*** (0.093)	1.196** (0.091)
Number of Times Family Moved, Birth to Age 16			1.002 (0.061)		1.012 (0.060)	1.012 (0.060)	1.005 (0.061)
<u>Child Level Measures</u>							
Cohort Member is Male			0.495*** (0.097)		0.465*** (0.090)	0.465*** (0.090)	0.491*** (0.097)
High Child Aggression, Measured at Age 7, Age 11, and Age 16			1.319* (0.191)		1.363** (0.192)	1.363** (0.191)	1.328* (0.193)
High Child Anxiety, Measured at Age 7, Age 11, and Age 16			0.845 (0.115)		0.795* (0.105)	0.795* (0.105)	0.846 (0.115)
Low Reading Ability, Measured at Age 7, Age 11, and Age 16			3.159*** (0.294)		3.776*** (0.339)	3.776*** (0.339)	3.145*** (0.293)
LR Chi Square (df)	28.38 (1)	261.54 (2)	499.97 (13)	28.55 (2)	446.69 (13)	446.69 (12)	501.10 (14)
Log Likelihood	-659.83	-543.25	-424.03	-659.74	-450.67	-450.67	-423.47
Pseudo R-Square	0.021	0.194	0.371	0.021	0.331	0.331	0.372
AIC [†]	1322.66	1092.52	876.06	1325.48	929.34	927.34	876.94

* p < .10; ** p < .05; *** p < .01 (Standard errors in parentheses). N=2658

[†] df = k+1, where k is the number of parameters (Standard errors in parentheses).

Financial disadvantage odds ratios in *italics* indicate a significant drop (p < .05) from Equation 1.