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Are Household Income, Gender, And Race Important In Shaping

Parental Involvement In Children's Education?

ABSTRACT

The authors used data from the National Household Education Surveys (NHES) Program 2007 Parent and Family Involvement in Education Survey (National Center for Education Statistics, 2007) (N=10,681) to examine household income, gender, and race of parents, and their importance in shaping parental involvement in children's education. The study finds that when accounting for tutoring that: (1) Pacific Islander mothers have the highest odds of being involved in their child's homework; (2) Black fathers have the highest odds of being involved in their child's homework; and (3) Low household incomes (compared to high household incomes) have the highest odds of being involved in their child's homework. This study supports previous research on "nontraditional parental involvement," as well as previous research regarding high African American parental involvement.

Key Words: Parental involvement in education; quantitative; No Child Left Behind Act

Are Household Income, Gender, And Race Important In Shaping Parental Involvement In Children's Education?

Parental involvement in children's education has been studied in great detail. It is meritorious of study because it has received much fanfare at the local and national levels. Case in point: Title I, Section 1118, of the No Child Left Behind Act (NCLB) is entirely dedicated to parental involvement. This statute defines parental involvement as the participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities, including ensuring the following: (a) that parents play an integral role in assisting their child's learning; (b) that parents are encouraged to be actively involved in their child's education at school; (c) that parents are full partners in their child's education and are included, as appropriate, in decision-making and on advisory committees to assist in the education of their child; and (d) that other activities are carried out, such as those described in Section 1118 (U.S. Department of Education, 2003).

Notwithstanding the U.S. Department of Education's (2003) mandate, according to Alkin and associates (1992) in *Encyclopedia of Educational Research,* parental involvement needs to be better understood, especially for families of different cultural and ethnic backgrounds, and characteristics such as race, social class, income, and marital status. At the time of conducting this study (May 2010) searching the term "parental involvement" in ERIC yielded 3,118 results, the oldest article dating to 1962.

Existing studies concerning parental involvement have examined parental involvement in homework (Patall, Cooper, & Robinson, 2008), mathematical procedural knowledge (Hartlep & Gosz, 2009), motivations for involvement (Deslandes & Bertrand,

2005; Green, Walker, Hoover-Dempsey, & Sandler, 2007), and why it makes a difference in children's education (Hoover-Dempsey & Sandler, 1995). A large body of literature asserts that parental involvement benefits children's learning (Chavkin, 1993; Eccles & Harold, 1993; Epstein, 1989, 1994; Hess & Holloway, 1984; Hobbs, Dokecki, Hoover-Dempsey, Moroney, Shayne, & Weeks, 1984; U.S. Department of Education, 1994) and another body contends that the level of parental involvement is related to, or a predictor of, school success (Eccles & Harold, 1993, 1994; Epstein, 1991). Notwithstanding the existing corpus of research on this topic, further research is needed that examines the impact that household income, gender, and race have on parental involvement.

Does parental involvement in children's education differ by household income, parent's gender, and/or race? The need for this line of research is caused by the change in family composition over the past two decades (Benfer, 2001; Federal Statistics, 1998), the dissolution of marriages (Benfer, 2001), the higher proclivity of cohabitation (Benfer, 2001), and the higher incidence of single-parent-headed households (Benfer, 2001; Federal Statistics, 1998). The nuclear family is no longer the proxy (Benfer, 2001). Families are required to do more with less (Federal Statistics, 1998) and yet still manage to be "involved with their children's education" while doing more than ever before.

Parental Involvement Background:

Research indicates that three categories or types of parental involvement exist: (1) *home-based involvement,* (2) *school-based involvement,* and (3) *academic socialization* (Hill & Tyson, 2009, p. 742). When parents and policy makers discuss "parental involvement" many times they are referring to types one and two above. *Home-based involvement* involves things like helping with homework and taking children to

educational settings such as museums and libraries, while *school-based involvement* refers to parental involvement in school events like PTA meetings and school open-houses.

A preponderance of previous sociological and educational research has indicated that the parents of culturally-, linguistically-, and economically-diverse students are involved in many nontraditional ways (Chapman, 2005; Daniel-White, 2002; Delgado-Gaitan, 2001; Drummond & Stipek, 2004; Lopez, 2001; Quiocho & Daoud, 2006). This corpus of research on "nontraditional parental involvement" requires pedagogues, policy makers, and parents to reexamine and reevaluate what constitutes parental involvement in education, and how and why we contextualize *some* typologies and not *others* during the categorization and policy-making processes.

Since the American family "ideal type" continues to be redefined, and for argument sake one cannot change one's gender or race,[1] a family's *household income* may be a very important factor in shaping parental involvement in children's education. Results of Eagle's (1989) study indicate that there may be interaction effects between parental involvement and social background; however, more research is needed.

The gender of the parent(s) and its impact on education has been studied numerously (Radin, 1972; Roopnarine et al., 2006). Research indicates that fathers' involvement in their children's education is related to higher intelligence scores (Radin, 1972) and that increased paternal involvement in education is related to increased academic abilities (Roopnarine et al., 2006). What is important in this body of research is what is coined "gender congruence" or the idea that parental involvement, and also

[1]*Race* is a social construction. We are referring to the binary construction of *gender* (male or female) and do not take into consideration other formations of gender, such as transgender, etc.

attachment occurs between identical sexes (e.g. fathers involved with sons, and mothers involved with daughters) (*c.f.* Aldous, Mulligan, & Bjarnason, 1998; Crouter & Crowley, 1990; Field et al., 1995; Harris et al., 1998; Nord et al., 1997; Wood & Repetti, 2004). Research indicates that fathers engage in more interactions with their sons than their daughters (Wood & Repetti, 2004).

Researchers must also consider race as a factor when studying parental involvement in education. Hill et al. (2004) indicate that the race of the parent(s) impacts parental involvement in education. In particular, African Americans have stronger parental involvement than European Americans (Hill et al., 2004). However, some research has found the opposite to be true (*c.f.* Seyfried & Chung, 2002). Others, like Hill and Tyson (2009), state that it is unclear whether or not parental involvement varies across race/ethnicity. This proposed study aims to clarify this.

Parental involvement has garnered considerable attention by researchers for many reasons. It is our opinion and the opinion of others that one of the most important reasons is simply due to national attention. Goal number eight of the National Educational Goals—parental participation—states that by the year 2000, every school will promote partnerships that will increase parental involvement and participation in promoting the social, emotional, and academic growth of children. According to the National Education Goals Panel (2010) this goal of parental participation will be achieved by three objectives:

> (1) Every State will develop policies to assist local schools and local educational agencies to establish programs for increasing partnerships that respond to the varying needs of parents and the home, including parents of children who are disadvantaged or bilingual, or parents of children with disabilities;

> (2) Every school will actively engage parents and families in a partnership which supports the academic work of children at home and shared educational decision making at school; and
> (3) Parents and families will help to ensure that schools are adequately supported and will hold schools and teachers to high standards of accountability.
> (National Education Goals Panel, 2010)

The purpose of the present study is to examine the impact that household income, race, and gender have on parental involvement in education. It is well documented that parental involvement in schoolwork has a positive influence in student achievement. Therefore, by better understanding how the aforementioned social factors influence parental involvement, policy makers and school officials can enact targeted programs to increase parental involvement.

Proposed Hypotheses:

H_1: Parents with a higher income will have a greater probability of being involved in their child's homework.

H_2: Non-white parents will have a lower probability of being involved in their child's homework than white parents.

H_3: Mothers will have a higher probability of being involved in their child's homework than fathers.

METHOD

Data

This study uses data from the National Household Education Surveys (NHES). The NHES data set covers learning at all ages (from early childhood to school age through adulthood) and was ordered from the United States' Department of Education. The most recent data collection conducted in 2007 consisted of two surveys: Parent and Family Involvement in Education and School Readiness. The parent and family involvement in education survey was used. This survey contained information about

family involvement in education, including family participation in school meetings and activities, involvement with homework, communication with teachers, and family activities. It also includes information about homeschooling and school choice. The 2007 NHES Parent and Family Involvement in Education and School Readiness survey contains responses from 10,681 participants.

Consequently, there are two main strengths of this data set: (1) the sampling technique in the NHES: Parent and Family Involvement in Education Survey used a probability-based sampling technique, so the assumption of independence is met, and (2) the data set is nationally representative.

Analytic Strategy

Since the study's interest was to model the predictors for parental involvement in homework help (≥ 3 days in an average week that a child is helped with his/her homework), a categorical dichotomous outcome, a logit analysis was used to model the effects of household income, gender, and race on the probability of being considered having parental involvement in homework.

Since parental involvement was not a continuous measure, it makes sense that the study's dependent variable (DV) be a logit (log odds). According to Warner (2008) binary logistic regression does not require as restrictive assumptions as other analyses (multiple linear regression and discriminant analysis). The model assumptions of binary logistic regression are as follows: (1) A dichotomous outcome (DV) variable (usually coded "1" and "0"), and (2) Scores on the outcome variable must be statistically independent of each other (Warner, 2008, p. 932). These two assumptions were met in the study.

Measures

Much research indicates that families with higher socioeconomic status (SES) and education are more involved in their children's education (Baker & Stevenson, 1986; Coleman, 1987; Entwistle, Alexander, Cadigan, & Pallas, 1986; Lareau, 1987; Stevenson & Baker, 1987). Emerging research indicates that race and ethnicity of the parent(s) are important in the process of parental involvement (Corwyn & Bradley, 2003; Davis-Kean, 2005); however, a problem is that "race and SES are confounded" (Davis-Kean & Sexton, 2009, p. 289), and further research is needed that addresses the complex role that SES and race/ethnicity play in parental involvement (Crozier, 2001; Conger & Donnellan, 2007).

Some research documents that "good parents"—parents that are involved in a good way—must assimilate; and further, that parental involvement must recognize the ethnic diversity amongst parents (Crozier, 2001). According to Crozier (2001), parental involvement has become perceived that all parents are the same, thus leading to one universal typology of parental involvement. Crozier (2001) calls this effect "multicultural drift" and the "deracialization" of parental involvement.

According to Creswell (2008), "An *operational definition* is the specification of how you will define and measure the variable in your study" (p. 160, [Emphasis in original]). This study examines three variables: (1) household income, (2) race of parent(s), and (3) gender of parent(s). *Parental involvement in children's education* (the dependent variable) was operationally defined as: "how many days in an average week someone in the household helps (him/her) with (his/her) homework during this school year" (p. 54 NHES Codebook, 2008). Our operational definition of parental involvement

is different than others' (Hill et al., 2004; NCLB, 2002). Hill et al. (2004) defines parental involvement in education as "parents' interactions with schools and with their children to promote academic success" (p. 1491). The No Child Left Behind Act (2002) defines parental involvement in education as "the participation of parents in regular, two-way, and meaningful communication involving student academic learning and other school activities" (§9101). Clearly, as Hill and Tyson (2009) have written, "[…] there are numerous definitions of parental involvement in education […]" (p. 741).

Parental involvement. To examine parental involvement in homework, the study analyzed responses to the question: *During this school year, about how many days in an average week do you or does anyone in your household help (him/her) with (his/her) homework?* The responses were recoded yes/no, so that 0 = No (Never; Less than once a week; and 1 to 2 days a week) and 1 = Yes (3 to 4 days a week; and 5 or more days a week). This variable contained 8.37% missing cases.

Household income. To examine household income the study examined the response to a categorical question. Respondents were asked: *What was the total income of all persons in your household over the past year, including salaries or other earnings, interest, retirement, and so on for all household members?* The responses were recoded high/middle/low, so that *Low* is ≤ $25,000; *Middle* is $25,001 -$50,000; and *High* is $50,001-$100,000+. This variable contained no missing cases.

Gender and Race. To examine the gender and race of parents, the study examined the responses to the categorical question: *What is [Child's/your] race? What is your race?* The racial designation was combined with parental gender. Race designations were: White, Black, American Indian, Asian, Hispanic, Pacific Islander, and Other.

Racial designation for fathers contained 19.8% missing cases and mothers contained 3.69% missing cases.

Free and Other Tutoring. To examine children who received "other" and "free" tutoring, the study examined the response to two yes/no questions: (1) *During this school year, has (CHILD) received free tutoring outside of regular school hours by a provider approved by your state or district?* and (2) *During this school year, has (CHILD) received any (other) tutoring?* These two tutoring variables had 57.38%, and 2.91% missing cases, respectively.

Theoretical Model

Binary logistic regression (logit) analyses were performed to predict parental involvement in homework based on household income, race, and gender of parent, and tutoring. The binary logistic regression procedure in SPSS was used to perform the analysis.

For k covariates the logit model is written as:

$$\log(\pi) = \beta_0 + \beta_1 X_1 + \ldots + \beta_k X_k + E$$

where π is the probability of parental involvement being present, and X_i the covariates (independent variables). The relative risk estimate of a given covariate is e^{β}.

Two models were run: a reduced logit model that only included household income variables, race variables, and gender variables, and a full model that also included whether or not a student received *free* tutoring and/or *other* tutoring.

Data from 7,490 respondents were included in the initial reduced logit model and data from 3,289 respondents were included in the final logit analysis. A test of the full

model (with whether or not a child received *free* or *other* tutoring) compared with a constant-only or null model was statistically significant, $X^2(18) = 117.66$, $p < .001$.

RESULTS

Table 1 provides descriptive statistics for the study variables. It also illustrates that the 2007 sample is largely white (79% of mothers were white and 82% of fathers were white) and largely comes from households that identify as middle-to-upper class (16% low household income; 21% middle household income; and 63% high household income).

[Table 1 About Here]

Table 2 reports the odds that parents are involved in their child's homework when *not* accounting for tutoring, based on the reduced model. This analysis indicates that of just mothers, Blacks have the highest odds (1.755) of being involved in their child's homework, followed by Asians (1.592), Pacific Islanders (1.346), Hispanics (1.232), Whites (1.206), Others (1.093), and American Indian (.946). Further, of just fathers, Pacific Islanders have the highest odds (1.515) of being involved in their child's homework, followed by Others (1.401), Blacks (1.288), Whites (1.199), Asians (1.152), American Indians (1.005), and Hispanics (1.131). Of the household income variable, low household incomes compared to high household incomes have a higher likelihood of being involved in their child's homework (1.416) than do middle household incomes compared to high household incomes in their child's homework (1.267).

[Table 2 About Here]

Table 3 reports the odds that parents are involved in their child's homework when accounting for tutoring, based on the full model. This analysis indicates that of just

mothers, Pacific Islanders have the highest odds (1.654) of being involved in their child's homework, followed by Blacks (1.238), Hispanics (1.184), Asians (1.147), Whites (.842), American Indians (.760), and Others (.687). Further, of just fathers, Blacks have the highest odds (2.083) of being involved in their child's homework, followed by Others (1.884), Pacific Islanders (1.669), Whites (1.557), American Indians (1.543), Hispanics (1.432), and Asians (1.407). Of the household income variable, low household incomes compared to high household incomes have a higher likelihood of being involved in their child's homework (1.763) than do middle household incomes compared to high household incomes in their child's homework (1.355). Of the two tutoring variables, if a child received "free" tutoring the odds of a parent being involved in child's homework (1.061) was slightly lower than that of a child that received "other" tutoring (1.134).

[Table 3 About Here]

The following variables were found to statistically significantly influence the probability of parents being involved in their child's homework, when all other factors were held constant in the reduced model: (1) Black mother (*Wald* = 5.098, *df* = 1, p = .024); (2) Asian mother (*Wald* = 3.918, *df*=1, p = .048); (3) Low household income (*Wald* = 15.867, *df* =1, $p < .001$); and (4) Middle household income (*Wald* = 13.487, *df*= 1, $p <$ .001).

By interpreting all of the coefficients at $\alpha = 0.05$ you are *not* maintaining the experiment-wise $\alpha = 0.05$, you are inflating it. Being a Black mother increases the probability of helping your child with his/her homework by 75.5% when holding all other factors constant. Being an Asian mother increases the probability of helping your child with his/her homework by 59.2% when holding all other factors constant. Having a low

household income increases the probability of helping your child with his/her homework by 41.6% when holding all other factors constant. Lastly, having a middle household income increases the probability of helping your child with his/her homework by 26.7% when holding all other factors constant.

The following variables were found to statistically significantly influence the probability of parents being involved in their child's homework, when all other factors were held constant in the full model: (1) Hispanic father (*Wald* = 4.564, *df* = 1, p = .03); (2) Black father (*Wald* = 4.016, *df* = 1, p = .045); (3) Low household income (*Wald* = 18.629, *df*= 1, $p < .001$); and (4) Middle household income (*Wald* = 9.809, *df* = 1, p = .002).

Again, by interpreting all of the coefficients at $\alpha = 0.05$ you are *not* maintaining the experiment-wise $\alpha = 0.05$, you are inflating it. Being a Hispanic father increases the probability of helping your child with his/her homework by 43.2% when holding all other factors constant. Being a Black father increases the probability of helping your child with his/her homework by 108.3% when holding all other factors constant. Having a low household income increases the probability of helping your child with his/her homework by 76.3% when holding all other factors constant. Lastly, having a middle household income increases the probability of helping your child with his/her homework by 35.5% when holding all other factors constant.

The strength of the association between parental involvement and the variables included in the model was analyzed by using scalar model fit. This was conducted for the reduced model and the full model using a Cox and Snell R^2, and a Nagelkerke R^2. Results of the reduced model indicate scores of .014 and .019, respectively. Results of the full

model indicate scores of .035 and .049, respectively. Therefore, we can conclude that the improvement in the likelihood of observing the sample data under the fitted model is 3.5 or 4.9, respectively, for the full model. We can also conclude that the improvement in the likelihood of observing the sample data under the fitted model is 1.4 or 1.9, respectively, for the reduced model.

The full model is a better predictor than the reduced model ($\chi^2(2) = 5.99$, $df = 2$, $\alpha = .05$). According to the Omnibus Tests of Model Coefficients in the full model, the coefficients of the logits were statistically significantly different than 0 (117.666, $df = 18$, $p < .001$). Also, according to the Omnibus Tests of Model Coefficients in the reduced model, the coefficients of the logits were statistically significantly different than 0 (105.675, $df = 16$, $p < .001$).

Results of the Hosmer and Lemeshow Goodness of Fit Test were not found to be statistically significant, $p = .376$. The null hypothesis for this goodness of fit test is that model is good. The alternative hypothesis is that the model is not a good fit. Therefore, since the results were not statistically significant, the full model is a *good fit* (Hosmer & Lemeshow, 2000, p. 162). However, according to the area under the ROC curve, .611, the full model is a *marginal fit*. This decision is made using the following rubric, or cut-points: $0.5 \leq$ Area under ROC curve $< .70$ [is marginal discrimination].

According to the case-wise list output, there were no outliers (that fell outside of 2 standard deviations) in the full model. Since there were no values in the matrix near the threshold of 0.9 according to the Correlation Matrix output, there were no issues regarding multicollinearity. Another inspection confirming that there were no

issues/problems regarding multicollinearity was that there were no standard error scores that exceeded 5.

DISCUSSION

The results from this study should be interpreted with several design limitations in mind. Importantly, the data limited the extent to which race could be examined, because the white racial category comprised such a large percentage of parents—both mothers and fathers. In addition to this racial imbalance, the reduced model had a large sample (N=7,490), while the full model was much smaller (N=3,289) since the two tutoring variables had many missing cases.

In spite of these limitations this study adds to the literature base because it attempted to analyze factors (household income, gender, and race) that are very important to research, and that have real-life implications for parental involvement efforts in homework. This is especially apparent given the fact that thirty-nine percent of all children live in either low-income or poor families (Douglas-Hall & Chau, 2008). This study supports previous research on "nontraditional parental involvement" (Chapman, 2005; Daniel-White, 2002; Delgado-Gaitan, 2001; Drummond & Stipek, 2004; Lopez, 2001; Quiocho & Daoud, 2006), as well as previous research regarding high African American parental involvement (Hill et al., 2004).

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Table 1: Descriptive Statistics

	N	% / Mean
Dependent Variable		
Parent Helped with Homework	9787	.37
Independent Variables		
Child Received…		
Free Tutoring	4552	.30
Other Tutoring	10370	.12
Mom is…		
Hispanic	10287	.17
White	10287	.79
Black	10287	.12
American Indian	10287	.03
Asian	10287	.04
Pacific Islander	10287	.01
Other	10287	.06
Dad is…		
Hispanic	8564	.15
White	8564	.82
Black	8564	.08
American Indian	8564	.02
Asian	8564	.04
Pacific Islander	8564	.01
Other	8564	.05
Household Income is…		
Low	10681	.16
Middle	10681	.21
High	10681	.63

Source: NHES: 2007

Table 2: Odds of Being Involved in Child's Homework in Reduced Model (Not Accounting for Tutoring) (N = 7,490)

Predictor	Odds Ratio	S.E.
Mom's Race…		
Hispanic	1.232	.108
White	1.206	.213
Black	1.755	.249
American Indian	.946	.180
Asian	1.592	.235
Pacific Islander	1.346	.353
Other	1.093	.265
Dad's Race…		
Hispanic	1.131	.110
White	1.199	.216
Black	1.288	.243
American Indian	1.005	.196
Asian	1.152	.238
Pacific Islander	1.515	.368
Other	1.401	.262
Household Income…		
Low (Compared to High)	1.416	.087
Middle (Compared to High)	1.267	.064
N	7490	

Source: NHES: 2007

Table 3: Odds of Being Involved in Child's Homework in Full Model (Accounting for Tutoring) (N =3,289)

Predictor	Odds Ratio	S.E.
Mom's Race…		
Hispanic	1.184	.166
White	.842	.318
Black	1.238	.356
American Indian	.760	.283
Asian	1.147	.360
Pacific Islander	1.654	.553
Other	.687	.392
Dad's Race…		
Hispanic	1.432	.168
White	1.557	.333
Black	2.083	.366
American Indian	1.543	.291
Asian	1.407	.391
Pacific Islander	1.669	.644
Other	1.884	.395
Household Income…		
Low (Compared to High)	1.763	.131
Middle (Compared to High)	1.355	.097
Child received…		
Free tutoring	1.061	.084
Other tutoring	1.134	.109
N	3289	

Source: NHES: 2007