The Influence of Parent Education on Child Outcomes: The Mediating Role of Parents Beliefs and Behaviors

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The literature on achievement has consistently shown that parent education is an important SES factor in predicting children’s achievement (Corwyn & Bradley, 2002; Duncan, Brooks-Gunn, & Klebanov, 1994; Haveman & Wolfe, 1984; Smith, Brooks-Gunn, & Klebanov, 1997).

The mechanisms for understanding this influence, however, have not been well studied.

Family process models have focused on specific behaviors such as harsh parenting, nurturing, and warmth (e.g. Conger, McLoyd,).

Less work has been done on how factors like parental beliefs such as achievement expectations or efficacy function as links between SES and achievement outcomes.
Theoretical Models

In order to examine these processes, the research is guided by a combination of:

• Family process models (Conger, et al., 2002; Corwyn & Bradley, 2002; Mistry, et al, 2002).

• Socialization models of achievement that focus on parental beliefs and behaviors as mechanisms that mediate the link between SES and child outcomes (Eccles, et al., 1993).
Basic Family Process Model

Parental SES → Economic Pressures → Parental Affective Response → Family Behaviors → Child Outcomes
Combination Model

Child Characteristics:
- Gender
- Age

Parental Beliefs/Expectations

Parental Behaviors In the Home:
- Reading Stimulation
- Play
- Warmth

Achievement
- WJ Broad Reading Score
- WJ Broad Math Score

SES Indicators:
- Education
- Income
Hypothesis

Guided by this model and the literature on family process, the following hypothesis were tested:

• Parent education influences achievement outcome indirectly through parental expectations (beliefs) and parental behaviors in the home.

• Achievement processes in the family are similar across racial groups.
Methods

- Data from a national, cross-sectional study of children, the 1997 Child Development Supplement of the Panel Study of Income Dynamics (PSID-CDS), was used for this study.

- PSID families with children birth -12 years of age completed an extensive battery of interviews and questionnaires for up to two randomly chosen children from their family. Only one randomly selected sibling was used for this study.

- This study focuses on two of these questionnaires, the Primary Caregiver Interview regarding the child and the Child Interview that contains the standardized achievement test.
Sample

- 869 children age 8-12 years, \( M = 10.7 ; \ SD=1.5 \)
- 436 females, 433 males
- 49% non-Hispanic European American (n=424)
- 47% African American (n=411)
SES Variables

- Parent Income (Family)
  - Mean = $49,862.75 (1997 US Census=$49,692)
  - Median = $38,500.00 (1997 US Census=$37,005)
  - SD = $68,144.99

- Parent Education (Highest)
  - Mean = 13.3 (a little more than HS diploma)
  - SD = 2.3
  - Range = 2nd grade – post graduate studies
Child Measures

- Gender (Male=1, Females=0)
- Ethnic Background (White=1, African American=0)

Woodcock-Johnson Achievement Test:
- Broad Reading Standard Score
  - Mean = 105.4, SD = 17.28, Range = 42-167
- Broad Math Standard Score
  - Mean = 105.1, SD = 19.23, Range = 18-162
Parent Expectations

• Educational Expectations (single item)
  • eleventh grade or less=1; professional degree, Ph.D.=8
Parent Behavior: Home Environment

Three aspects of the home environment were examined:

- reading stimulation ($\alpha = .28$)
- parent-child play behavior ($\alpha = .88$)
- parental warmth ($\alpha = .64$)
Multidimensional HOME

Achievement Activities
  - How often do you read to child?
  - How often does child read for enjoyment?
  - Do you work on homework with Child?

Cognitive Activities
  - Gone to museum
  - Gone to theater/music

Warmth
  - Praise
  - Spoke
  - Respond
  - Positive feelings
  - Show Warmth

Physical Appearance of Home
  - House Monotonous
  - Rooms Cluttered
  - Rooms Clean

Family Routines
  - Eat with Parents
  - Family Get togethers

Home Routines
  - Washed clothes together
  - Done Dishes
  - Prepared Food
  - Cleaned House

Play
  - Arts and Crafts
  - Played Board Games/Puzzles
  - Played Sports
  - Played video games
Analysis Plan

1. Test the Family Process Model
2. Test for Race differences (Multi-group analyses)
3. Test for Mediation between SES and Achievement
Test of Race Differences

Structural model: Are there differences by Race?

- Multigroup:
  - $\chi^2 = 691.127/ \text{df}(276)$ constrained
  - $\chi^2 = 614.645/ \text{df}(250)$ unconstrained
  - $\chi^2_{(\text{diff})} = 76.48/ \text{df}(26); p < .001$
- Chi-square is significant, thus the process models for race are not the same.
- Individual models will need to be fit by race
Parenting Influence Model for Achievement: European Americans

Fit Statistics:
χ²/df=2.75
CFI=.99
RMSEA=.06
Parenting Influence Model for Achievement: African Americans

**Fit Statistics:**
- $\chi^2/df = 2.17$
- CFI = .99
- RMSEA = .05

**Key Variables:**
- Parental Educational Expectations ($R^2 = .17$)
- Parental Education
- Family Income
- Child's age
- Gender
- Reading Stimulation ($R^2 = .36$)
- Read for enjoyment
- Number of books
- Play ($R^2 = .05$)
- Arts and Crafts
- Sports
- Video games
- Games/Puzzles
- Warmth ($R^2 = .11$)
- Positive feelings
- Praise
- Spoke
- Show warmth
- Standardized Achievement ($R^2 = .55$)
- WJ Broad Math
- WJ Broad Reading

**Coefficients:**
- Parental Educational Expectations:
  - Parental Education: $-.27^{***}$
  - Family Income: $-.28^{**}$
  - Child's age: $-.12^{**}$

- Parental Education:
  - Positive feelings: $.30^{***}$
  - Praise: $.30^{***}$
  - Spoke: $.28^{***}$

- Family Income:
  - Positive feelings: $.26^{***}$
  - Praise: $.28^{***}$
  - Spoke: $.27^{***}$

- Child's age:
  - Positive feelings: $.26^{***}$
  - Praise: $.28^{***}$
  - Spoke: $.27^{***}$
Test for Mediation

Two strategies were used:

1. Compare models with mediation of beliefs and behaviors and with direct effects and no mediation.
   - $\chi^2 = 876.046/\text{df}(282)$ direct.
   - $\chi^2 = 614.645/\text{df}(250)$ mediated.
   - $\chi^2_{(\text{diff})} = 261.40/\text{df}(32); p < .001$.
   - Significantly different with mediated model fitting the data better ($\chi^2 = 2.45$, RMSEA=.04, CFI=.99 vs $\chi^2 = 3.32$, RMSEA=.05, CFI=.98).

2. Compare models ranging from direct effects of SES to full model (not shown but fully mediated model explained the most variance and had the best fit indices for the 4 models examined-SES alone; SES and Beliefs, SES and Behavior, Full Model).
Summary

• The results support the hypothesis that SES, and in particular parent education, exerts its influence on child achievement through parental beliefs and behaviors.

• The process of this influence is different for European American and African Americans with African Americans fitting the mediated model better.

• The results also indicate that parent education is a strong predictor of parental educational attainment expectations and, in the European American sample, a strong direct predictor of child outcomes even with income, child characteristics, and family process variables in the model.
Conclusions

• For these age groups, the positive influence of parent education may be more important than income due the need for parents to help with schoolwork and school-related activities (choice of course work, discussions with teachers, knowledge of negotiating school tasks).

• Parental beliefs and behaviors are important pathways to examine when examining the role of parent education attainment on child achievement.

• The direct influence of parent education on child achievement in the European American sample suggest that there are still pathways or variables that are needed to understand the influence of parent education on child outcomes.
Thank you.

For More Information:

http://www.rcgd.isr.umich.edu/garp
## Correlations

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**Note:** Significant two-tailed correlations are in **bold**. Correlations between .07-.09 are significant at the p < .05 level; .10 to .11 are significant at the p ≤ .01 level, and those .12 and above are significant at the p ≤ .001.