Predictive Validity of Cognitive and Behavioral Measures in Head Start:

Relationships Within and Across Cognitive and Social Developmental Domains

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Research Questions

- How well does the FACES assessment battery predict reading and general knowledge at the end of kindergarten?
- How well do the child behavior ratings collected in FACES predict social competence at the end of kindergarten?
- Do behavior ratings contribute to prediction of reading and general knowledge at the end of kindergarten?

Research Questions (2)

- How well do cognitive gains during Head Start predict reading and general knowledge at the end of kindergarten?
- How well do changes in behavior ratings during Head Start predict social competence at the end of kindergarten?
- Do FACES cognitive and behavior measures predict promotion to first grade?

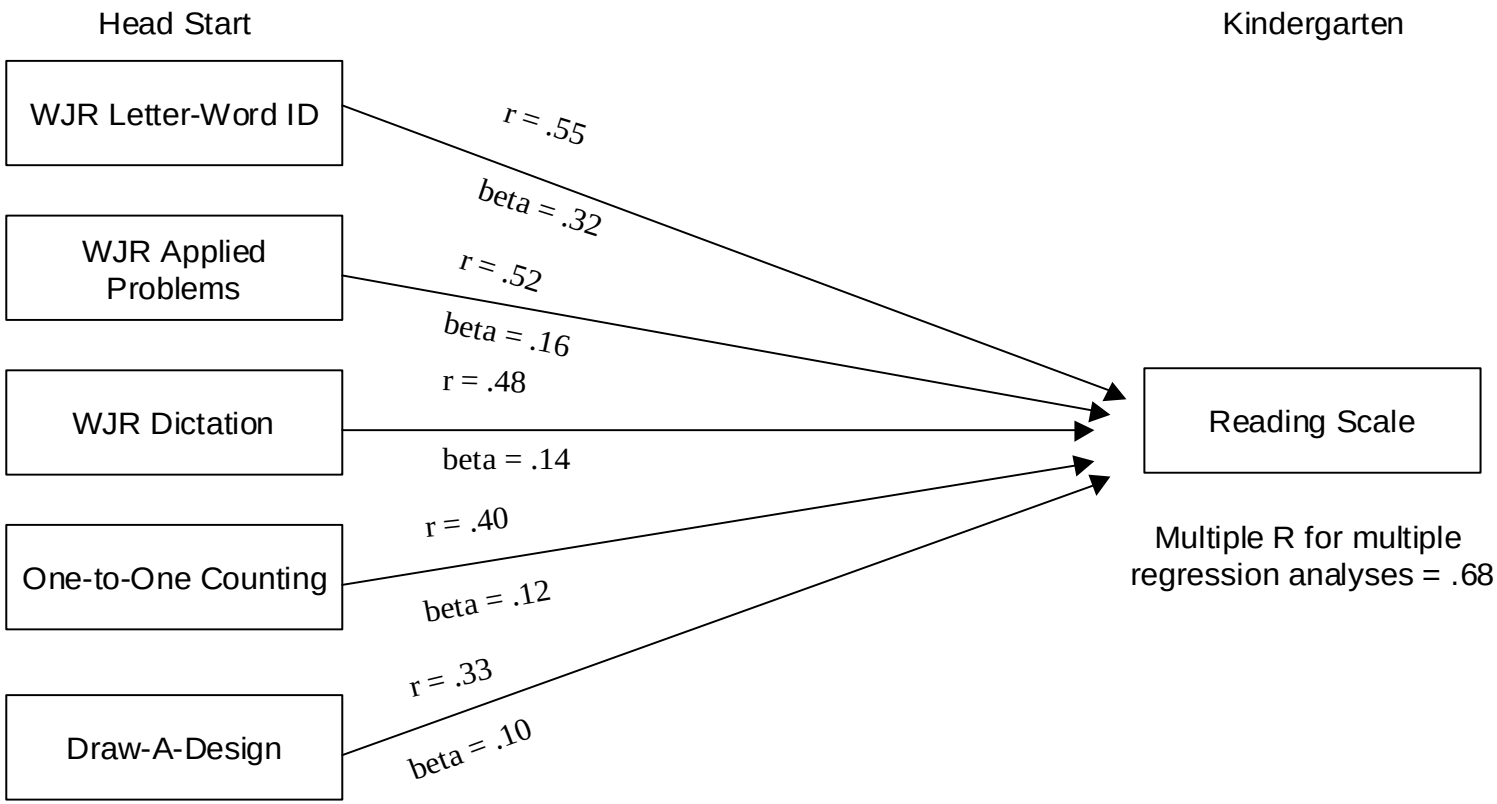
Analysis Method

- Correlate outcome scores at spring of kindergarten with scores from FACES instruments at spring of Head Start
- Multiple linear regression analyses predicting outcome scores at spring of kindergarten from scores from FACES instruments at spring of Head Start
- All children were assessed in English

FACES cognitive battery predicts two skill domains

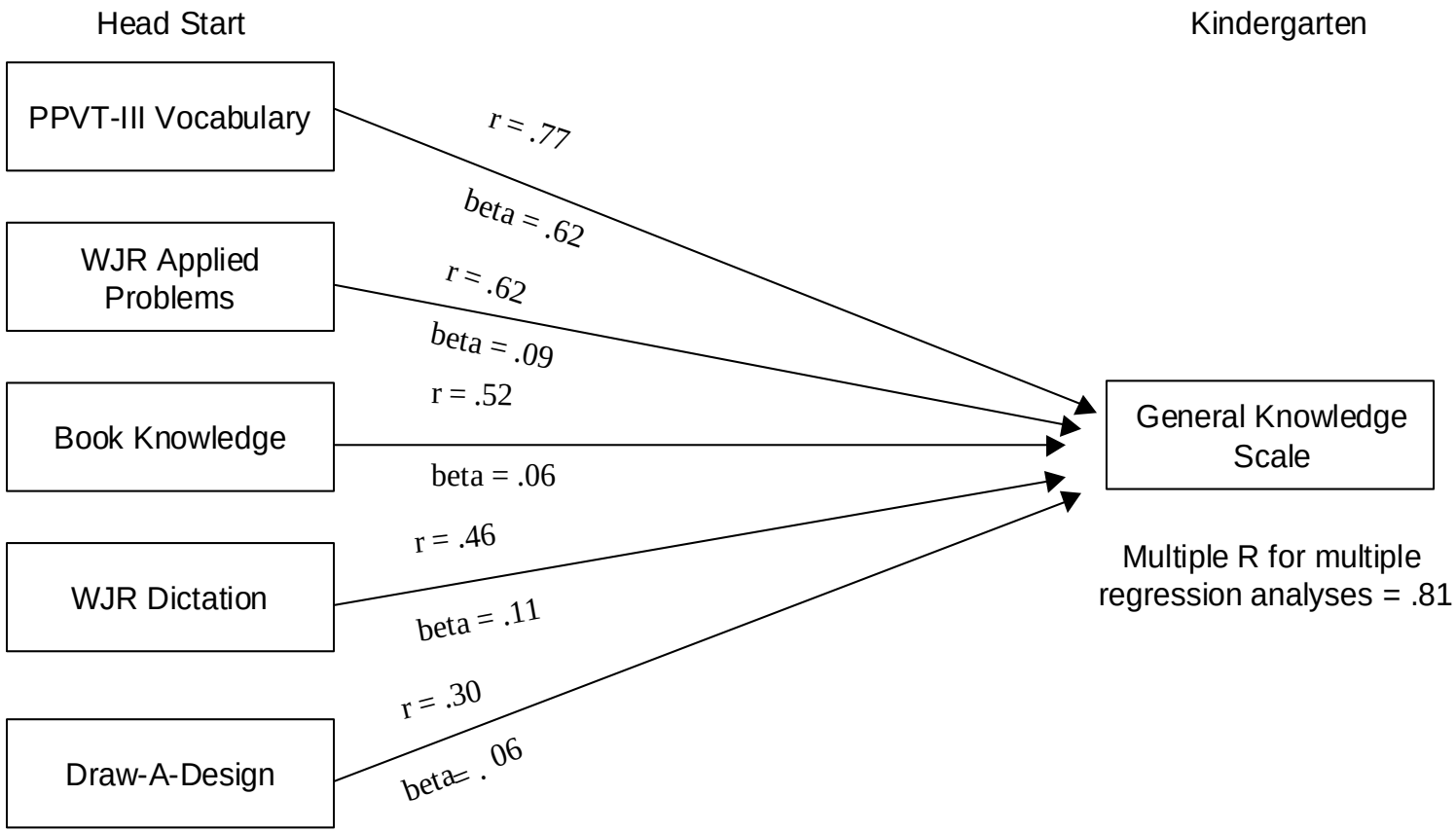
- “Inside-out” skills: letter recognition, letter-sound association, and word decoding
- “Outside-in” skills: general information, word knowledge, and conceptual understanding

Correlations and Standardized Multiple Regression Coefficients between Reading Scale Scores at End of Kindergarten Year and FACES Assessment Scale Scores at End of Head Start Year



SOURCE: Head Start Family and Child Experiences Survey (FACES), Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 718-786 for bivariate correlations, 623 for multiple regression coefficients.

Correlations and Standardized Multiple Regression Coefficients between General Knowledge Scale Scores at End of Kindergarten Year and FACES Assessment Scale Scores at End of Head Start Year

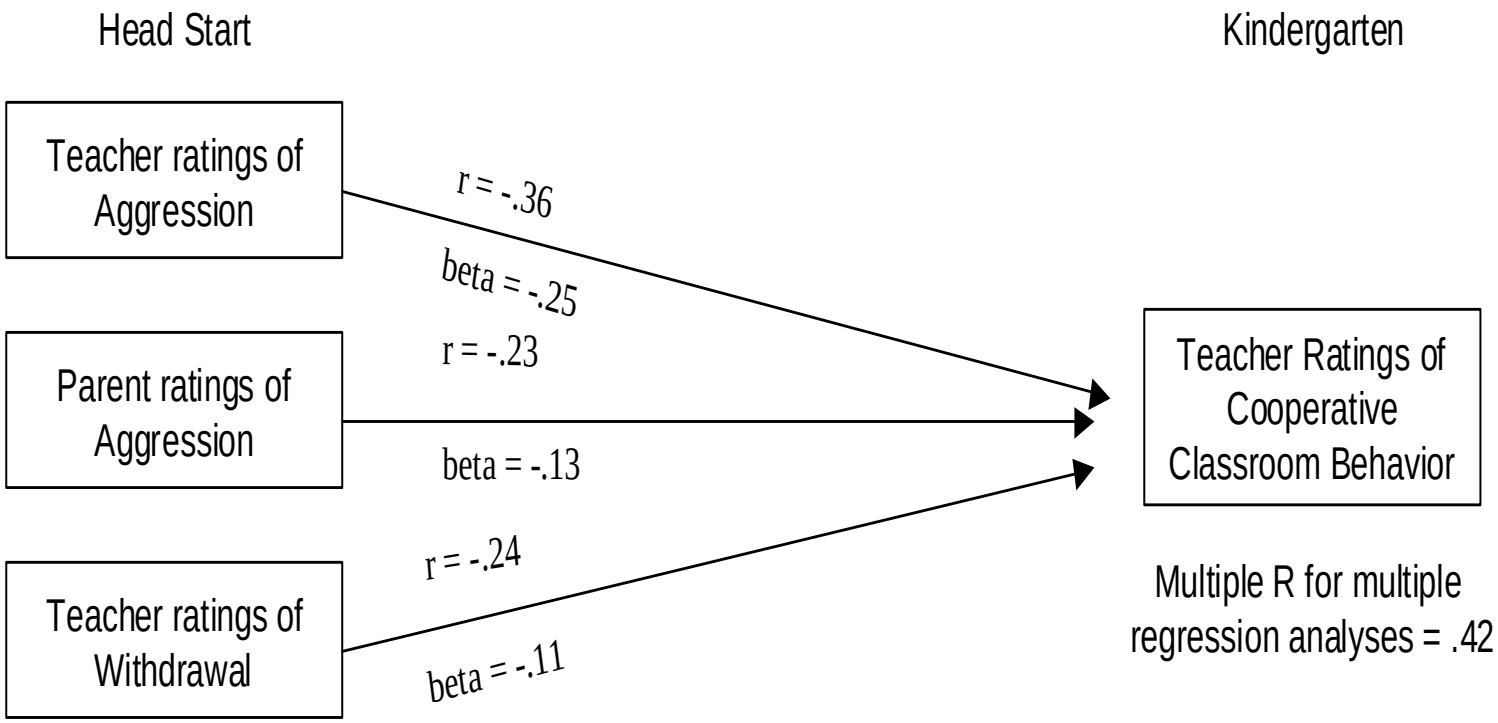


SOURCE: Head Start Family and Child Experiences Survey (FACES), Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 720-787 for bivariate correlations, 624 for multiple regression coefficients.

Behavior ratings predict kindergarten outcomes

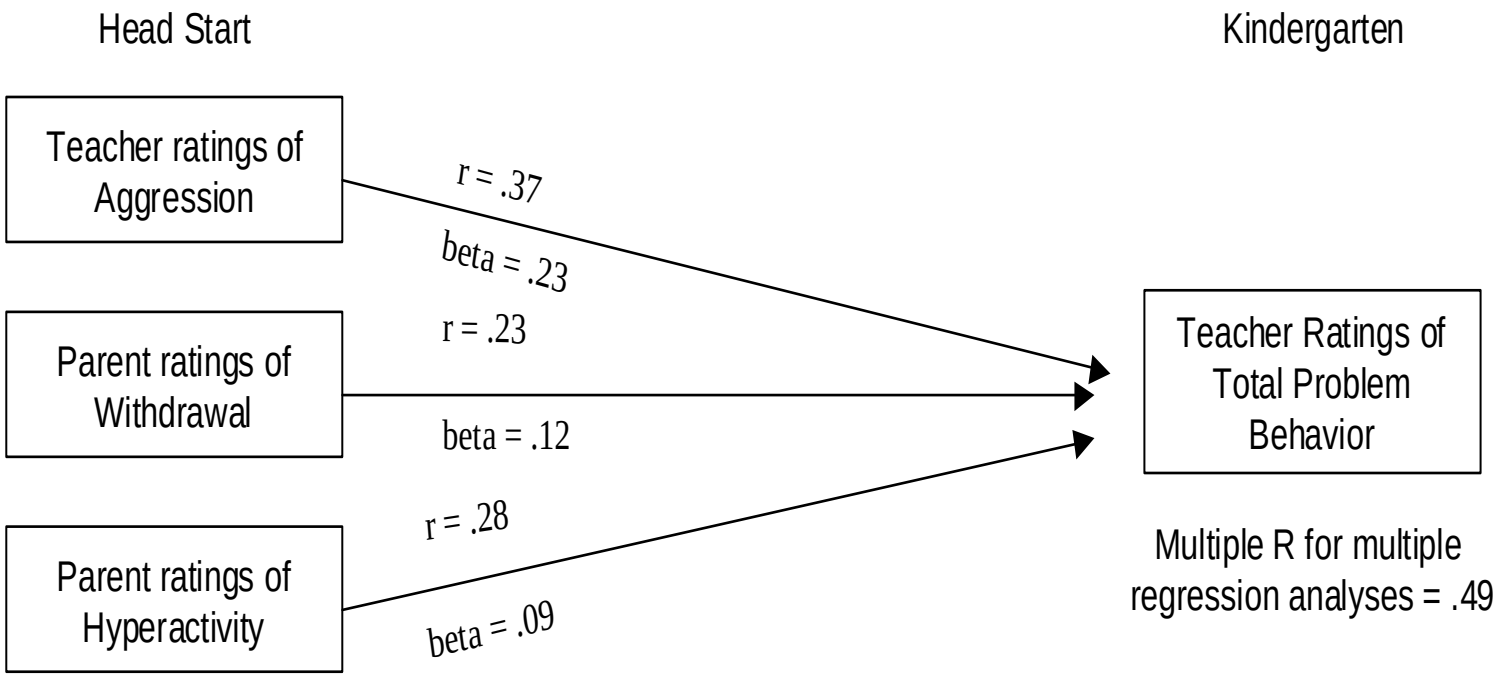
- Parent and teacher ratings both significantly contribute to prediction of teacher ratings of social skills at end of kindergarten
- Parent and teacher ratings significantly predict reading skills and general knowledge at end of kindergarten

Correlations and Significant Standardized Multiple Regression Coefficients between Teacher Ratings of Cooperative Classroom Behavior at End of Kindergarten Year and Parent and Teacher Behavior Ratings at End of Head Start Year



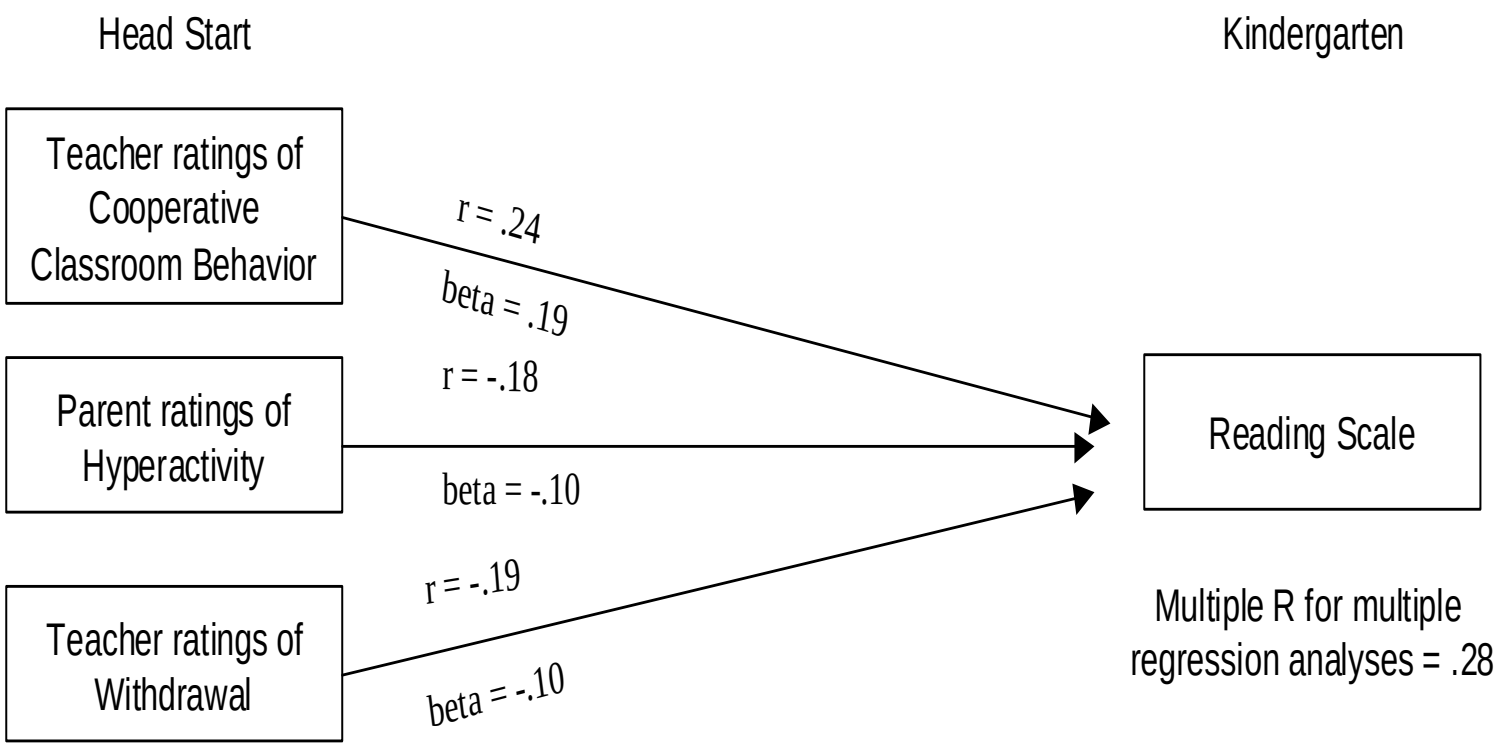
SOURCE: Head Start Family and Child Experiences Survey (FACES), Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 556-575 for bivariate correlations, 542 for multiple regression coefficients.

Correlations and Significant Standardized Multiple Regression Coefficients between Teacher Ratings of Total Problem Behavior at End of Kindergarten Year and Parent and Teacher Behavior Ratings at End of Head Start Year



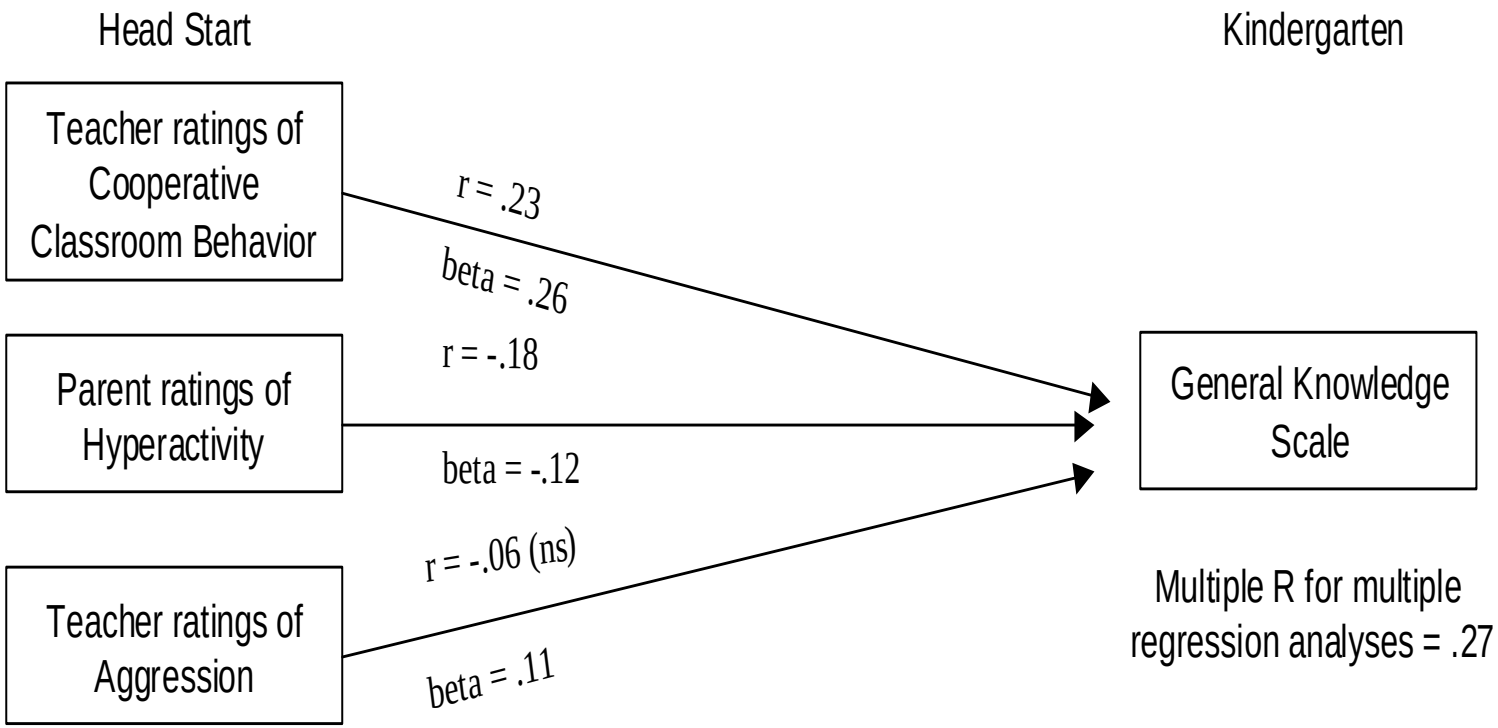
SOURCE: Head Start Family and Child Experiences Survey (FACES), Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 556-575 for bivariate correlations, 542 for multiple regression coefficients.

Correlations and Significant Standardized Multiple Regression Coefficients between Reading Scale Scores at End of Kindergarten Year and Parent and Teacher Behavior Ratings at End of Head Start Year



SOURCE: Head Start Family and Child Experiences Survey (FACES), Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 741-771 for bivariate correlations, 719 for multiple regression coefficients.

Correlations and Significant Standardized Multiple Regression Coefficients between General Knowledge Scale Scores at End of Kindergarten Year and Parent and Teacher Behavior Ratings at End of Head Start Year

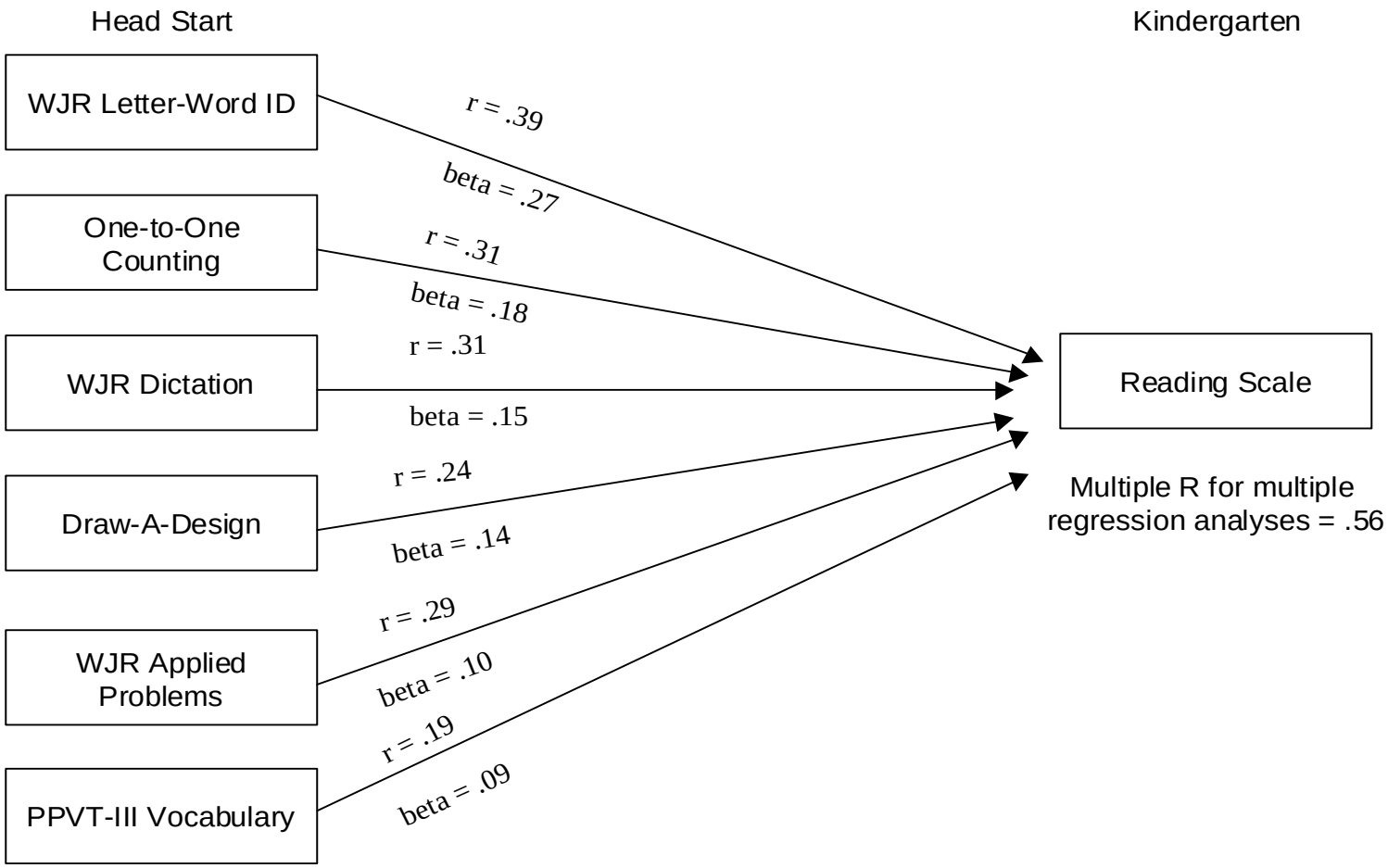


SOURCE: Head Start Family and Child Experiences Survey (FACES), Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 742-772 for bivariate correlations, 719 for multiple regression coefficients.

Change score analyses

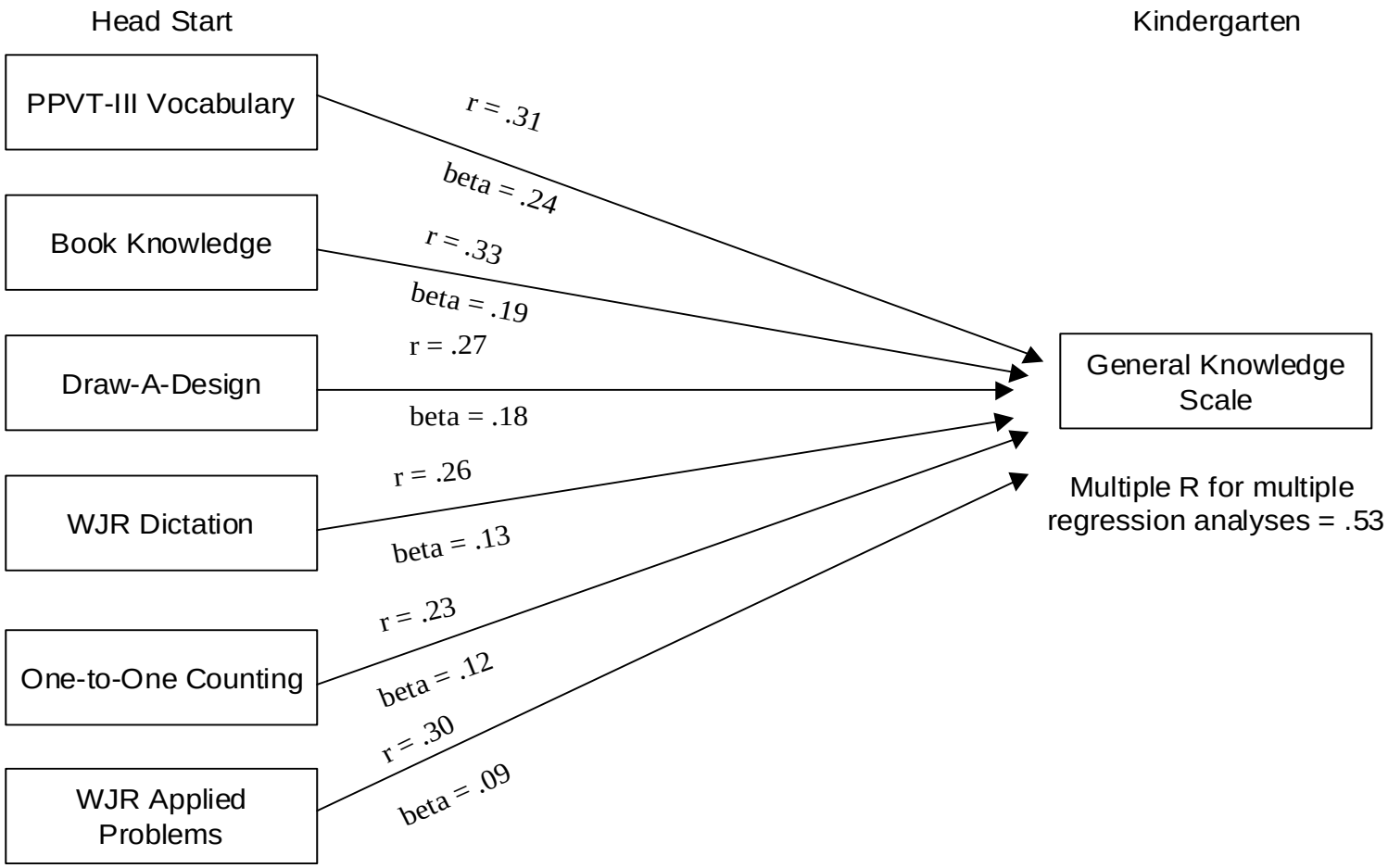
- Change score = Spring score - Fall score
- All analyses control for fall baseline score
- Predictive validity analyses examined through
  - Correlations with kindergarten outcomes
  - Multiple linear regression analyses predicting kindergarten outcomes

Correlations and Standardized Multiple Regression Coefficients between Reading Scale Scores at End of Kindergarten Year and FACES Assessment Scale Gain Scores during Head Start Year



SOURCE: Head Start Family and Child Experiences Survey (FACES), Fall 1997, Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 580-697 for bivariate correlations, 441 for multiple regression coefficients.

Correlations and Standardized Multiple Regression Coefficients between General Knowledge Scale Scores at End of Kindergarten Year and FACES Assessment Scale Gain Scores during Head Start Year



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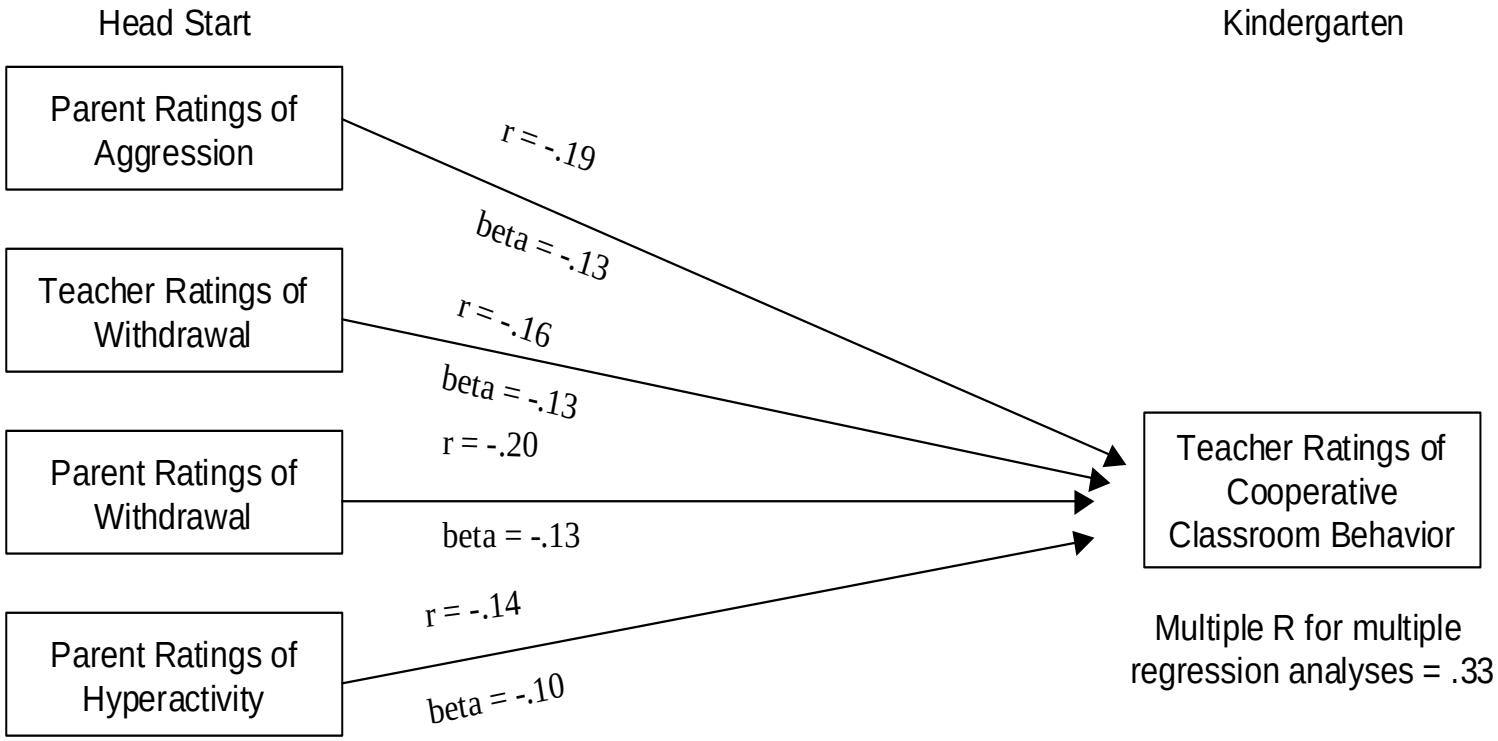
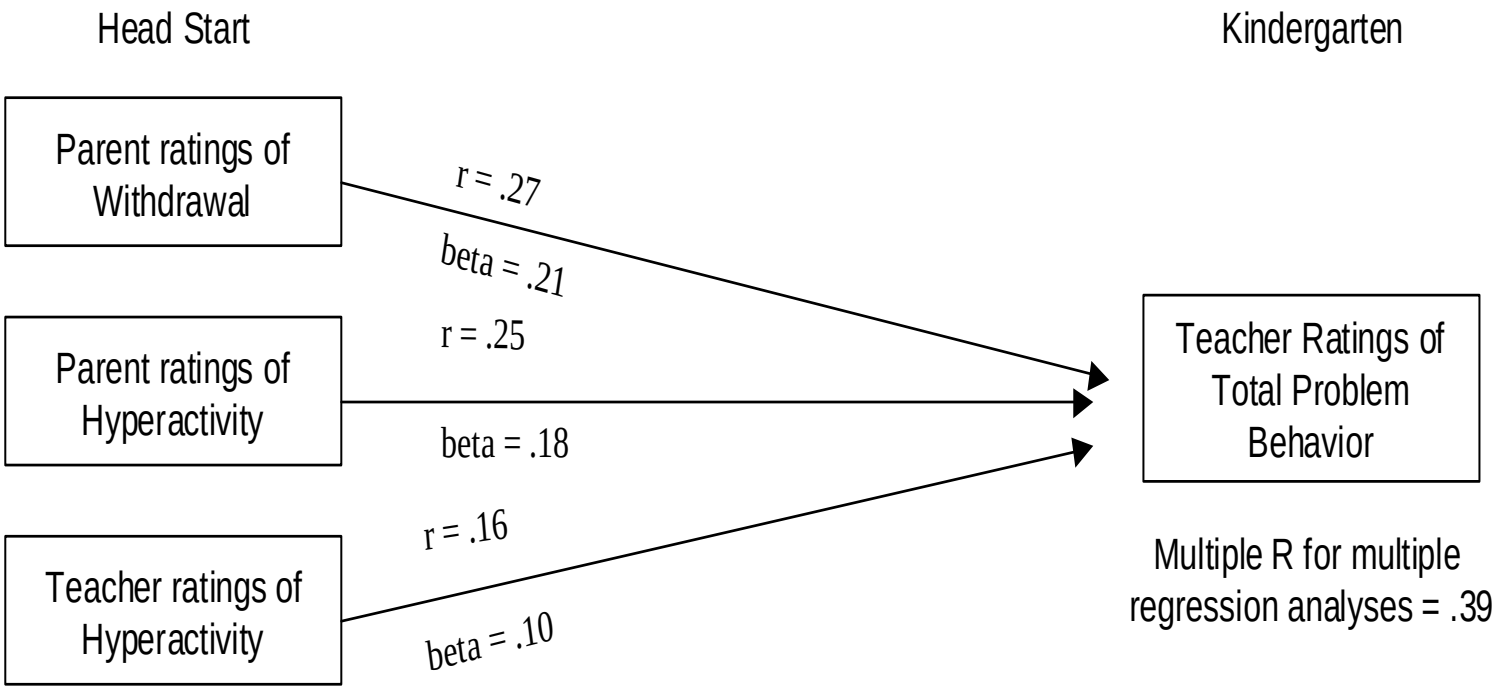
Correlations and Standardized Multiple Regression Coefficients between Teacher Ratings of Cooperative Classroom Behavior at End of Kindergarten Year and Parent and Teacher Behavior Ratings Gain Scores during Head Start Year



SOURCE: Head Start Family and Child Experiences Survey (FACES), Fall 1997, Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 474-510 for bivariate correlations, 432 for multiple regression coefficients.

Correlations and Standardized Multiple Regression Coefficients between Teacher Ratings of Total Problem Behavior at End of Kindergarten Year and Parent and Teacher Behavior Ratings Gain Scores during Head Start Year



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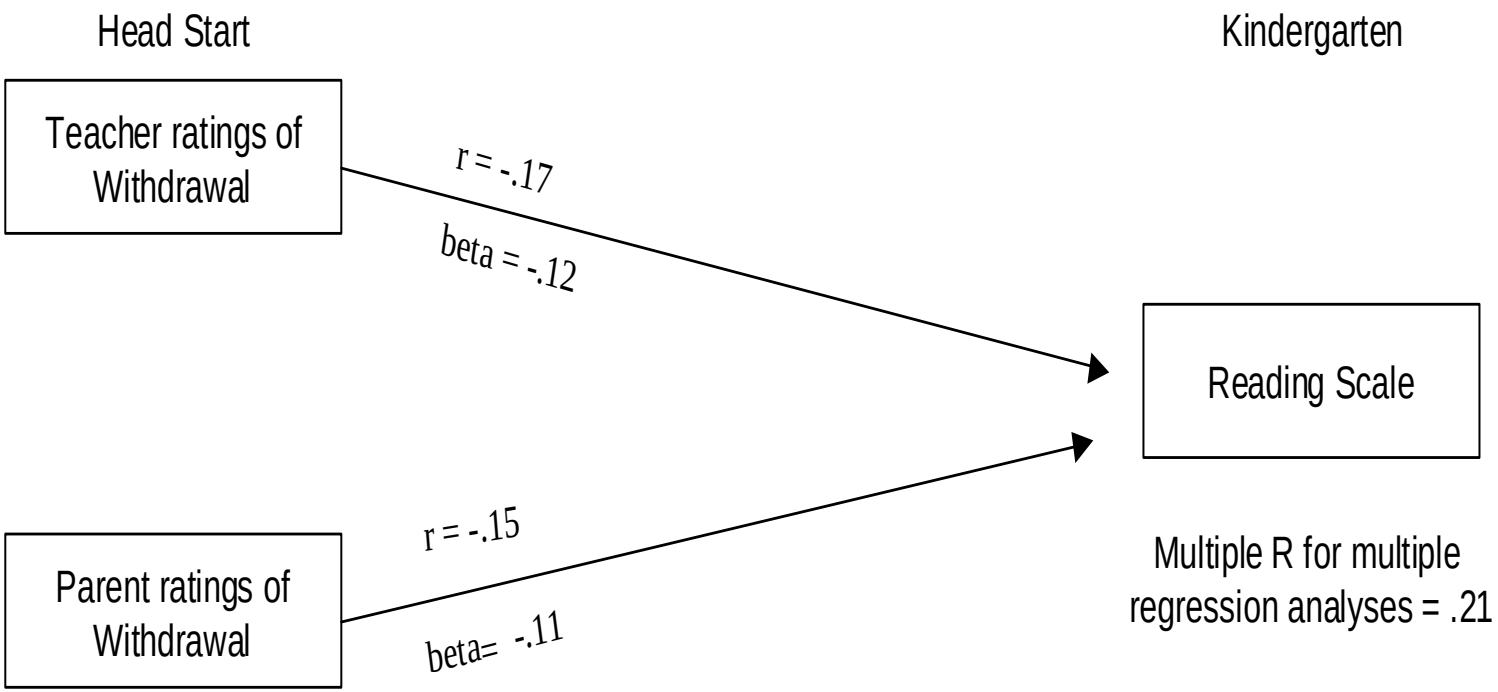
Correlations and Standardized Multiple Regression Coefficients between Reading Scale Scores at End of Kindergarten Year and Parent and Teacher Behavior Ratings Gain Scores during Head Start Year

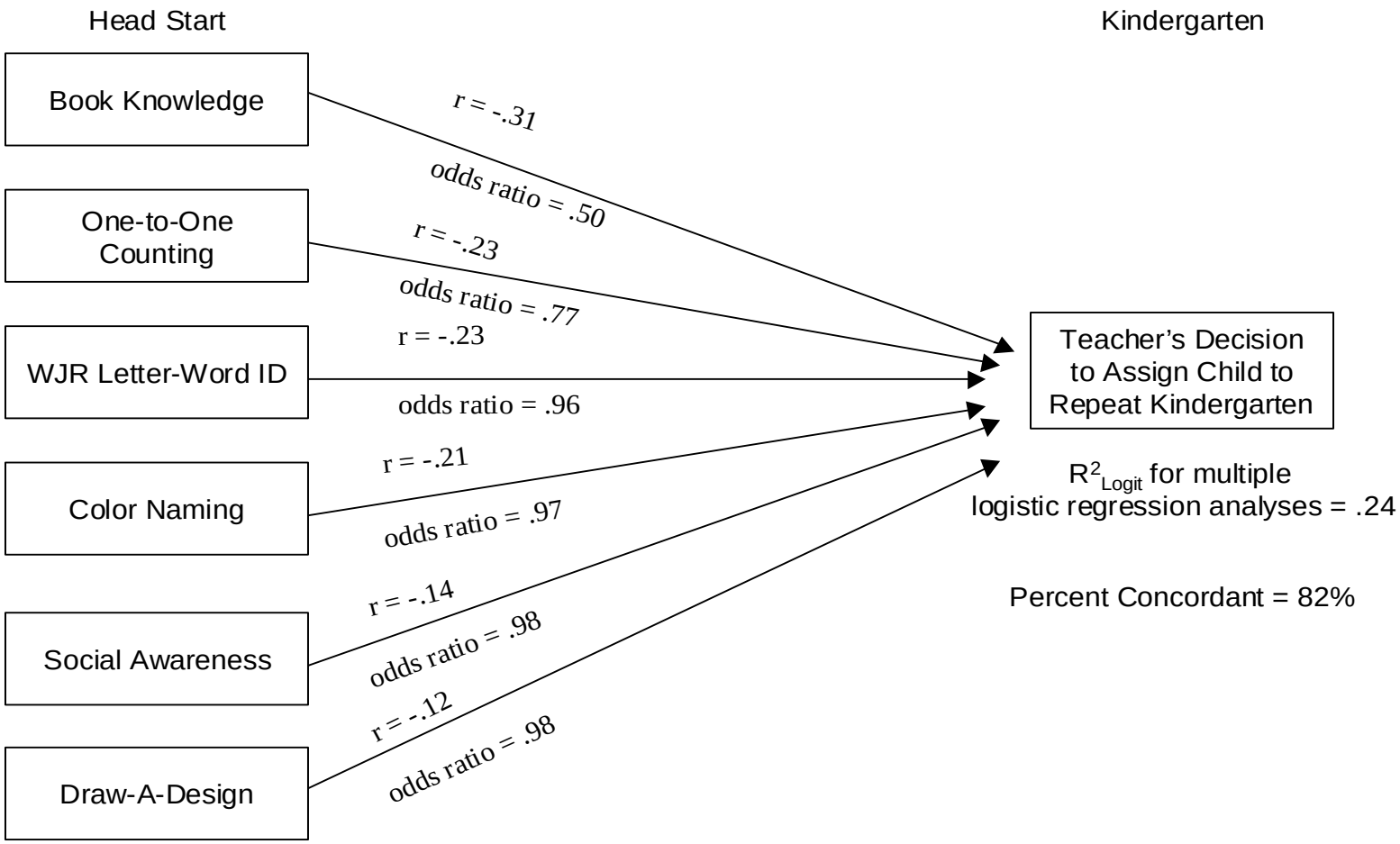


SOURCE: Head Start Family and Child Experiences Survey (FACES), Fall 1997, Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 621-680 for bivariate correlations, 568 for multiple regression coefficients.

Practical Decision Making

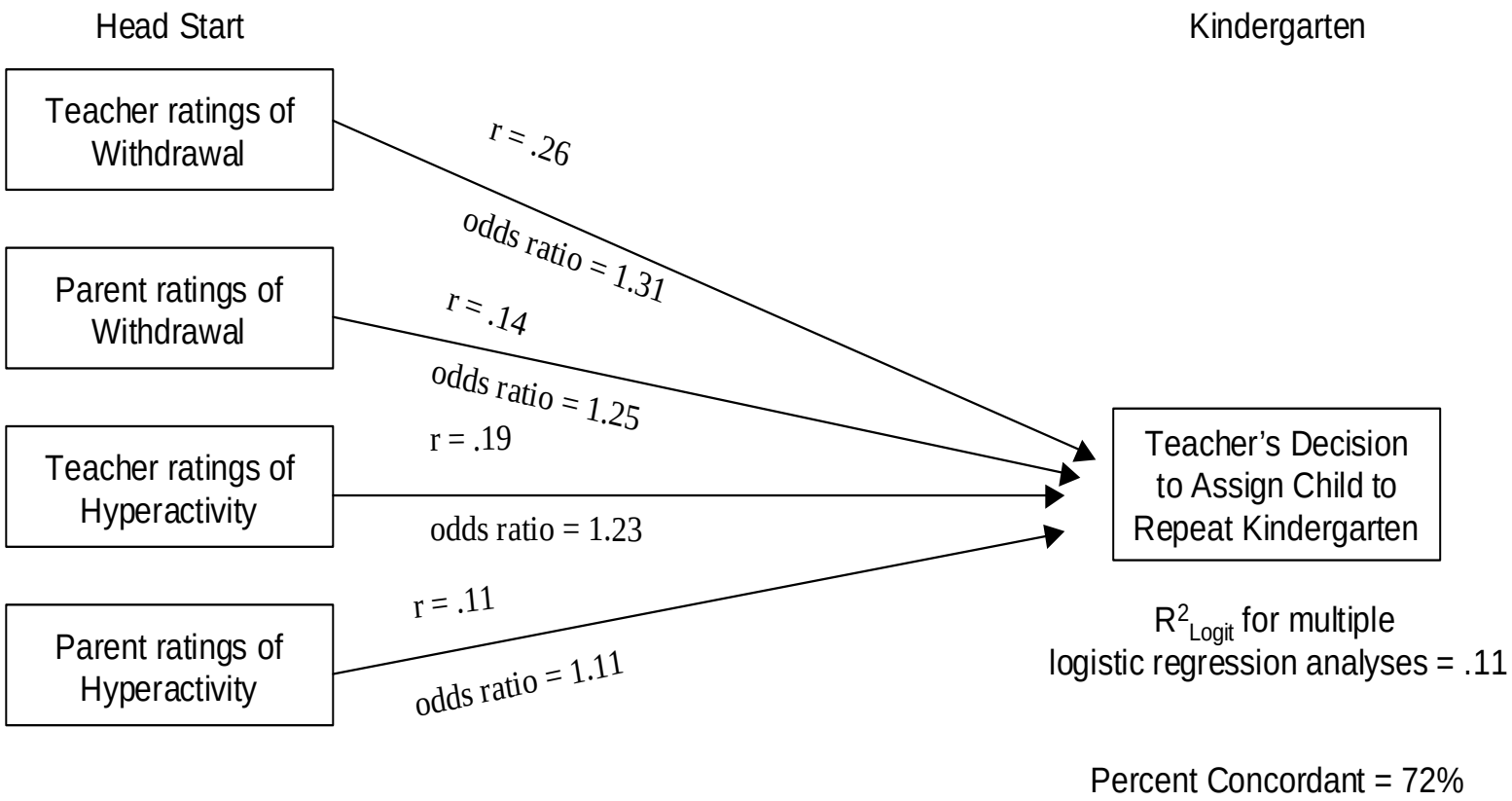
- Do FACES instruments predict teachers' decisions of whether a child repeats kindergarten or gets promoted to first grade?
- At FACES kindergarten follow-up, 12% Head Start children were either assigned to repeat kindergarten or to a transitional first grade

Correlations and Odds-Ratio Estimates between Teachers' Decisions at End of Kindergarten Year to Assign Child to Repeat Kindergarten and FACES Assessment Scale Scores at end of Head Start Year



SOURCE: Head Start Family and Child Experiences Survey (FACES), Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 551-583 for bivariate correlations, 474 for multiple logistic regression odds ratio estimates.

Correlations and Odds-Ratio Estimates between Teachers' Decisions at End of Kindergarten Year to Assign Child to Repeat Kindergarten and Parent and Teacher Behavior Ratings at end of Head Start Year



SOURCE: Head Start Family and Child Experiences Survey (FACES), Spring 1998 Head Start and Spring 1999 Kindergarten Followup, Ns = 551-583 for bivariate correlations, 474 for multiple logistic regression odds ratio estimates.

Implications

- As an indicator of pre-literacy skills, the FACES cognitive measures show strong associations with reading ability at the end of the kindergarten year.
- As an indicator of school adjustment and social competence, the FACES behavior ratings demonstrate ability to predict kindergarten behaviors that promote learning.

Implications

- The FACES instruments tap “inside-out” or decoding skills as well as “outside-in” or comprehension skills that are important for children’s future reading proficiency and academic achievement.
- The FACES behavior ratings contribute to the prediction of teachers’ practical decision of whether a child repeats kindergarten or is promoted to first grade.

Implications

- The multi-measure and multi-method approach to the measurement of children's abilities used in FACES provides a variety of information sources that significantly contribute to the prediction of kindergarten outcomes.