

**DIVORCE AND REMARRIAGE EFFECTS ON MATHEMATICS
PERFORMANCE: MATERNAL EXPECTATIONS MEDIATE DECLINE**

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ABSTRACT

This longitudinal study relates maternal academic expectations to the math performance of adolescents in sixth and ninth grades. Five groups of families were compared: 1) Married, 2) Long-Term Remarried, 3) Long-Term Divorced, 4) Newly Remarried, and 5) Newly Divorced.

While there were no differences in sixth grade teacher reports of math performance, there was a difference in mothers' expectations for sixth grade math performance. Long-term divorced and newly remarried mothers had lower expectations than married mothers and reported they would be satisfied with lower grades in math for their child than married mothers. Mothers who would be divorcing later in the study did not report different expectations for their adolescents than married or long-term remarried mothers.

For ninth grade math aptitude test scores, adolescents in newly divorced families did not perform differently than those in married and long-term remarried families. Adolescents who lived in long-term divorced families and newly remarried families scored significantly lower than those in the other family types. Regression showed that maternal expectations mediated the relationship between family structure and math aptitude.

BACKGROUND

This paper examines families in different stages of the divorce and remarriage process, and focuses on how maternal attitudes may be related to differences in adolescents' cognitive performance.

Deficits in quantitative performance have been found when children in divorced or father-absent families are compared to children from intact families. Typically, these studies compare the performance of children in intact families to that of children in single-mother headed families without consideration for length of paternal absence. There is some evidence that children who are very young at the time of separation are more likely to experience decrements than children who are older, but few studies address the effects of time since divorce.

Single mothers have been found to have lower expectations for their children's school performance. These lowered expectations may contribute to the decline in academic performance, playing a mediating role between divorce and children's lower achievement outcomes. Longitudinal evidence linking achievement declines following divorce to maternal expectations is needed.

METHODS

SUBJECTS

The sample for this study was drawn from the existing longitudinal sample of students in the Study of Adolescent Life Transitions. The families were from six middle and lower-middle class communities in southeastern Michigan and represents a range of socioeconomic and educational characteristics.

Five groups of families were compared: 1) parents married throughout the child's life [Married, N=522]; 2) mothers remarried before the student was in the sixth grade and still remarried at tenth grade [Long-Term Remarried, N=32]; 3) mothers divorced before sixth grade and still divorced at tenth grade [Long-Term Divorced, N=38]; 4) mothers remarried between the sixth and tenth grades [Newly Remarried, N=21]; and 5) mothers divorced between sixth and tenth grades [Newly Divorced, N=20].

PROCEDURE

Performance ratings were obtained from the students' math teachers in sixth grade, and math grades and standardized test scores were obtained from school records for the ninth and tenth grades. Mothers' attitudes were assessed with a questionnaire mailed home in sixth grade.

7th grade math

MEASURES

Sixth Grade Math Performance

Teachers rated each student on the following question:

- Compared to other students in this class, how well is this student performing in math?

The scale ranged from 1 (near the bottom of the class) to 5 (one of the best in the class).

Sixth Grade Mother Attitudes

Mothers were asked two questions about math grades:

- What grade in math do you expect your child to get this term?
- What is the lowest grade or evaluation your child could get in math that you would be satisfied with?

The responses ranged from 4 (D) to 14 (A+).

Ninth Grade Math Aptitude

Percentile rank on the Numerical Ability subscale of the Differential Aptitude Test was collected from the school records of each student.

RESULTS

Analysis of variance for maternal marital status revealed that while there were no differences between adolescents in the five groups for teacher ratings of math performance in sixth grade, there was a difference in mothers' expectations for sixth grade math performance, and a parallel pattern emerged in ninth grade for students' math aptitude.

Maternal Expectations (Sixth Grade)

The long-term divorced (divorced prior to sixth grade) and newly remarried (remarried between sixth and ninth grades) mothers expected lower math grades than the married mothers. In addition, long-term divorced mothers reported they would be satisfied with lower grades in math for their child than married mothers.

Mothers who would be divorcing later in the study (newly divorced) did not report significantly different expectations for their adolescents than married or long-term remarried mothers and did have significantly higher expectations for math performance than the long-term divorced and newly remarried mothers.

Math Aptitude (Ninth Grade)

For the numerical ability subscale of the Differential Aptitude Test, adolescents in newly divorced families did not perform differently than those in married and long-term remarried families. However, those adolescents who lived in long-term divorced families and newly remarried families scored significantly lower than those in the other family types.

Maternal Expectations Mediate Decline

Recursive path analysis was used to test for whether the effects of family structure on math aptitude were mediated by maternal expectations. To test for mediation, the following three steps were followed: first, regressing expectations on family structure; second, regressing ninth grade aptitude on family structure; and third, regressing aptitude on both family structure and expectations.

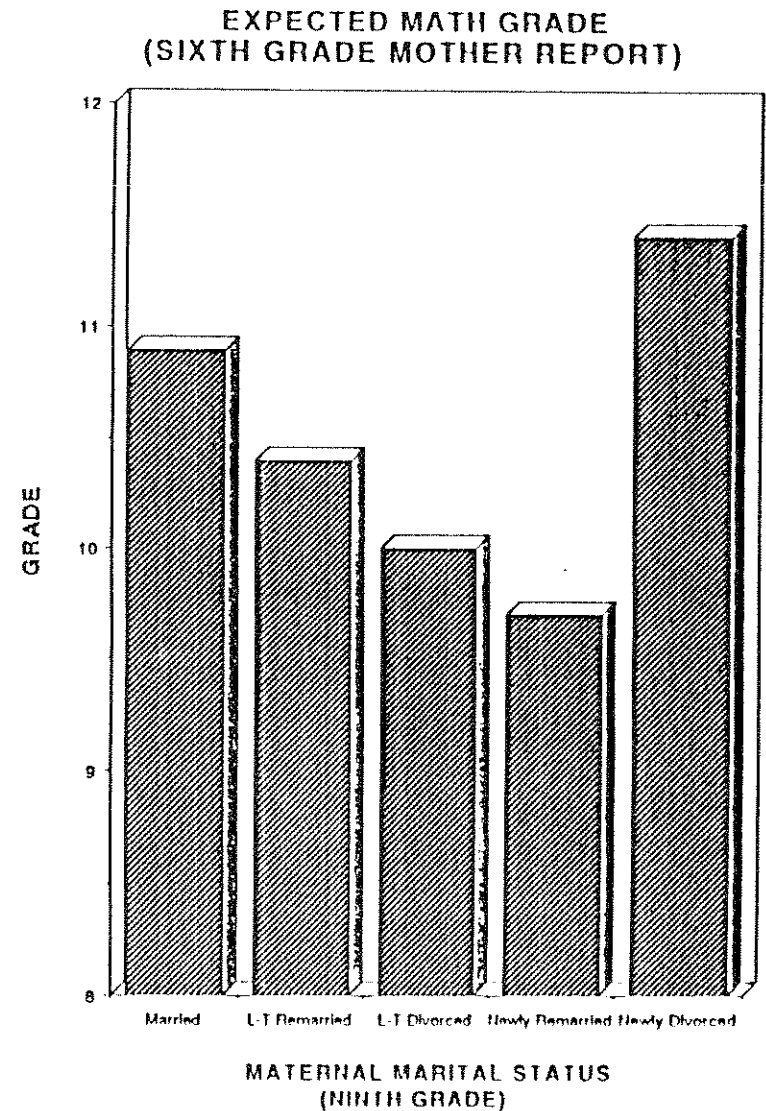
Figure 1 shows that maternal expectations mediated the relationship between family structure and math performance. The lower expectations and lower minimum requirements of long-term divorced and newly remarried mothers account for the lower math aptitude found in ninth grade for adolescents in those families.

*as determined
Nunnally*

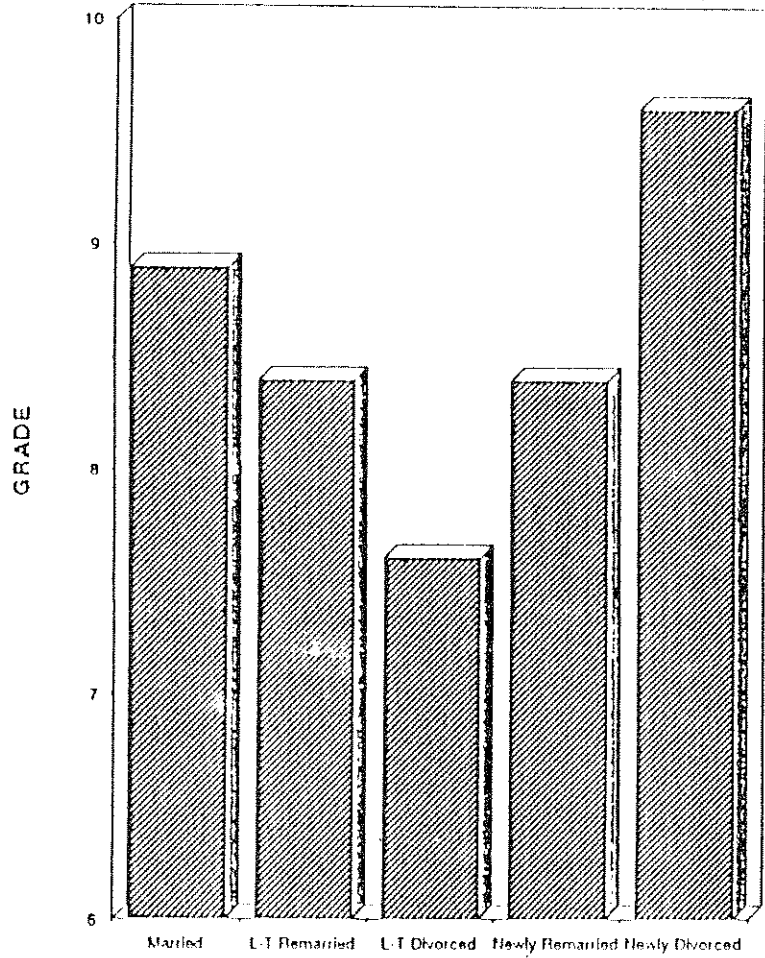
CONCLUSIONS

Maternal marital status was linked to math aptitude, with adolescents in long-term divorced and newly remarried families having lower performance. Maternal reports of expected math grade, combined with minimum satisfactory math grade, accounted for the performance differences across family types. Thus, the frequently discussed deficits in math performance in single-mother families may result in part from lowered maternal academic expectations.

Expectations about what is likely to happen to one's child may change in the face of the stress accompanying divorce and the dramatic income fluctuations associated with marital dissolution. If single mothers believe the widespread oversimplification of research findings stating that divorce is bad for children, they may lower their goals to what they consider to be reachable limits for their children given the family's new resources and stresses. The results of this study suggest that over time those lowered expectations may lead to a decline in performance, playing a mediating role between divorce and adolescents' lower achievement outcomes.

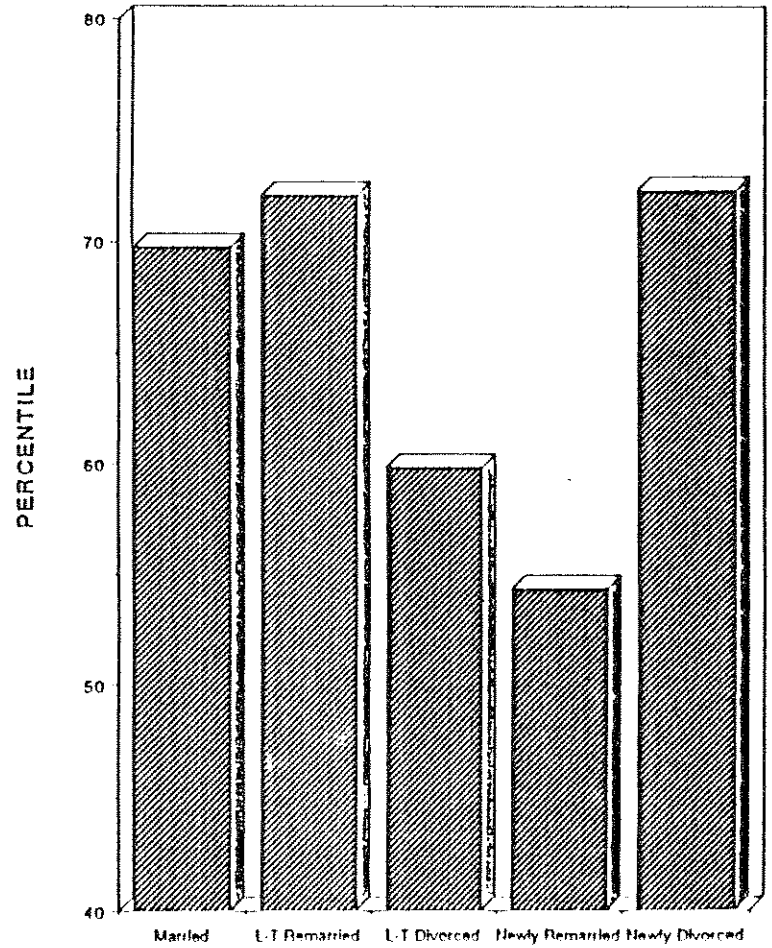


MINIMUM SATISFACTORY MATH GRADE
(SIXTH GRADE MOTHER REPORT)



MATERNAL MARITAL STATUS
(NINTH GRADE)

NINTH GRADE MATH APTITUDE BY
MOTHER'S MARITAL STATUS



MARITAL STATUS

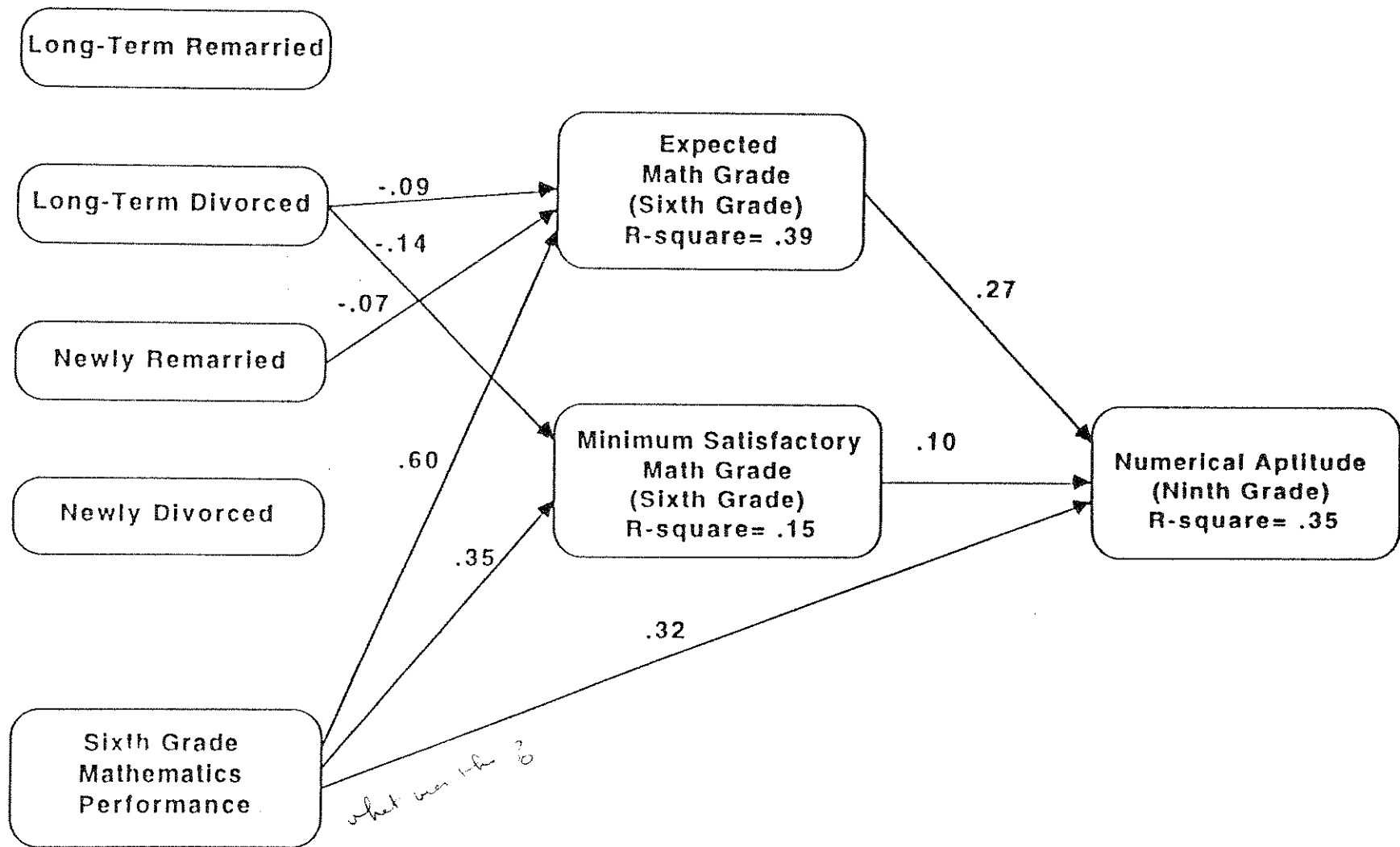


Figure 1. Mediating role of maternal expectations between family structure and child performance (Significant standardized Betas are shown on the paths)