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Charlotte J. Patterson

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EXPERIENCING PERSISTENT AND
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**Psychosocial Adjustment among Children Experiencing
Persistent and Intermittent Family Economic Stress**

Charlotte J. Patterson
Department of Psychology
University of Virginia

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Abstract

Much research on family economic stress and its effects on children has been cross-sectional in nature, has focused primarily on white children, and has assessed the impact of episodic rather than chronic economic stress. In contrast, the present research was designed to study outcomes associated with persistent economic stress among a heterogeneous group of children over a three-year period. Results showed that for black and white children living in single-parent or two-parent homes, a broad range of difficulties was associated with enduring economic stress. Children who were subject to persistent family economic stress were more likely than those who did not experience such stress to be low achieving, have difficulties in peer relations, show conduct problems at school, and report low self-esteem. Children who experienced intermittent family economic stress fell between the other two groups on every measure. Connections between persistent economic stress and psychosocial adjustment were generally more pronounced for boys than for girls. Consistent with suggestions by a number of investigators, the impact of economic hardship on children in the present sample was mediated by its association with parental behavior.

Psychosocial Adjustment among Children Experiencing Persistent and Intermittent Family Economic Stress

Children are the poorest age group in the United States today. In 1987, for example, 20.6 percent of American children under the age of 18 were living below federally designated poverty levels, as compared to 13.5 percent of the entire population of the United States and 12.2 percent of the population 65 years of age or older (U.S. House of Representatives Select Committee on Children, Youth, and Families, 1989). In 1987, over thirteen million American children were living in poverty. Clearly, then, poverty affects significant numbers of American children.

A large body of research exists that demonstrates there are associations between poverty on the one hand and negative outcomes on the other for the children who experience it (e.g., Elder, 1974; Elder et al., 1992; Gecas, 1979; Huston, 1991; Kohn, 1963; Lempers, Clark-Lempers, & Simons, 1989; McLoyd, 1989, 1990; Patterson et al., in press; Slaughter, 1988; Zill & Coiro, 1992; Zill, Moore, Smith, Stief, & Coiro, 1991). Indeed, family economic stress during childhood has long been associated with negative outcomes for children both in psychosocial and in academic domains. Most studies are, however, cross-sectional in nature and for this reason do not allow a full understanding of the effects of family economic circumstances on children's development over time (Featherman, Spenner, & Tsunematsu, 1988).

Longitudinal studies of family income such as the Panel Study of Income Dynamics have revealed that while many families with children move into and out of poverty status over time, others remain poor over substantial intervals (Duncan & Rodgers, 1988). The former group of families experience what is here termed "intermittent" economic stress, while the latter group of families experience what is here termed "persistent" economic stress. Because most studies of poverty's effects on children have been cross-sectional in nature, it has not yet been possible in most cases to study the effects on children's development of persistent versus intermittent economic stress. Thus,

although it is widely believed that the effects of persistent economic stress on children are more negative than those of intermittent or no economic stress, little information is available with which to evaluate this hypothesis.

In this context, the present research seeks to identify correlates of persistent family economic stress in the areas of personal, social, and academic development during childhood. Drawing on the archives of the Charlottesville Longitudinal Study, a study of psychosocial risk and resilience among children in the Charlottesville (Virginia) Public Schools during the years 1986-1989, the present research compares psychosocial and academic growth among children from families that experienced significant economic stress during all, part, or none of the period of time under study. The study thus compares development among children growing up in families that can be characterized as experiencing persistent, intermittent, or no economic stress during the period of the research.

In addition to family economic stress, children's gender is an important predictor of psychosocial outcomes during childhood. It is widely agreed that greater difficulties are experienced by boys during childhood (Elder, 1979; Hartup, 1983; Hetherington, Camara, & Featherman, 1983). It is also believed that boys may be more vulnerable than girls to a variety of stressors (Rutter & Garnezy, 1983). The association of poverty and negative outcomes in the present sample has been shown in cross-sectional analyses to be more pronounced for boys than for girls (Patterson, Kupersmidt, & Vaden, 1990; Patterson, Vaden, Griesler, & Kupersmidt, 1991; Patterson, Vaden, & Kupersmidt, 1991). Accordingly, we considered gender as a factor in developmental outcomes studied here. Children's ethnicity and household composition were also included as factors in the design to assess the extent to which other effects held true for both white and black students, growing up in either single-parent or two-parent homes.

In addition to testing the direct link between economic stress and child outcomes, we also wanted to examine the extent to which such linkages might be mediated by maternal involvement. A

number of researchers have suggested that the effects of family economic pressures are felt by children and adolescents at least in part through the influence of those pressures on the behavior and emotional states of their parents (Clark, 1983; Conger et al., 1992; Elder, 1979; Lempers et al., 1989; McLoyd, 1990). Earlier cross-sectional work confirmed the importance of parental involvement as a mediating variable (Kupersmidt et al., 1990). The present study will assess the extent to which parental involvement accounts for linkages between economic stress and child outcomes over time.

DATA AND METHODS

Source of Data

Data were drawn from the archives of the Charlottesville Longitudinal Study (CLS) (Kupersmidt et al., 1990; Kupersmidt & Patterson, 1991; Patterson et al., in press; Patterson, Kupersmidt, & Griesler, 1990; Patterson, Kupersmidt, & Vaden, 1990; Patterson, Vaden, Griesler, & Kupersmidt, 1991; Patterson, Vaden, & Kupersmidt, 1991). The CLS employed a cohort-longitudinal design to follow a large, heterogeneous group of public school students over the years 1986-1989. In the spring of 1986, when the study began, the three cohorts of children were in second, third, and fourth grades; their modal ages were 8, 9, and 10, respectively. In 1986, data were collected on 1,042 students, who represented over 95 percent of all children registered in these grades in the Charlottesville Public Schools during the years of the study. In subsequent assessments, data were collected every year during the period of the study (i.e., through 1989).

Subjects and Design

The subjects for the proposed research were 534 students who took part in the CLS during each of the four years of the study. In 1986, these students were in second, third, and fourth grades

and their modal ages were 8, 9, and 10, respectively. Earlier work had established that the group of students studied here (n=534) did not differ significantly from the 1986 sample (n=1,042) on any comparison variables (Kupersmidt & Patterson, 1991). Despite some attrition over the period of the research, then, the longitudinal sample was representative of the original group from which it was drawn.

Using criteria that are described below, each child was classified as having lived in a low-income family either during every year of the study (persistent family economic stress); during one, two, or three years of the study (intermittent family economic stress); or during no year from 1986 to 1989 (no family economic stress).

The overall design of this research was a 3 (income groups: persistent, transitory, or no economic stress) x 2 (gender: male, female) x 2 (ethnicity: white, black) factorial. Within this design, the principal hypotheses were that effects of persistent economic stress are more negative than those of transitory or no economic stress, and that these effects are greater overall for boys than for girls. The design also allowed a test of the hypothesis that relations between economic stress, gender, and the dependent variables are similar for both white and black students. Thus the central questions of the proposed research were addressed by analyzing the effects of the independent variables (viz., income group, gender, and ethnicity) on changes in dependent variables representing four different aspects of school-based competence (viz., academic achievement, peer relations, behavior problems, and self-concepts) over time.

The numbers of children in the sample in each category of family economic stress, gender, and ethnicity are shown in Table 1. Although the distribution of children was uneven across categories, there were sufficient numbers of children in each of the major categories to allow analysis.

As expected on the basis of national figures, ethnicity and persistence of family economic stress were strongly related in this sample. For example, during the period of this study, black

TABLE 1

**Numbers of Children in the Sample as a Function of
Gender, Ethnicity, and Family Economic Stress**

	<u>No Economic Stress</u>		<u>Intermittent Economic Stress</u>		<u>Persistent Economic Stress</u>		Totals
	White	Black	White	Black	White	Black	
Girls	117	29	28	40	15	46	275
Boys	99	25	23	35	14	63	259
Totals	216	54	51	75	29	109	534

Source: Charlottesville Longitudinal Study.

children in the sample were more than four times as likely as white children to have experienced persistent family economic stress. Black children made up only 20 percent of those experiencing no family economic stress, but 60 percent of those experiencing intermittent family economic stress and 79 percent of those experiencing persistent family economic stress.

Materials and Procedures

In each year of the CLS, core assessments focused on four areas of children's competence at school: academic achievement, behavior problems, peer relations, and self-concepts (see Patterson, Kupersmidt, & Griesler [1990] and Patterson, Kupersmidt, & Vaden [1990] for details about assessment procedures). Indices of each child's academic achievement based on standardized SRA achievement tests for mathematics, reading, and language were available from school records; national percentile scores for each subtest and for a composite reading-math-language score were used here. Assessments of behavior problems were made by classroom teachers for each child, using standardized rating scales (Patterson, Kupersmidt, & Vaden, 1990); these yielded summary scores for internalizing (i.e., shy, anxious) and for externalizing (e.g., aggressive, acting out) behavior problems (see Patterson, Kupersmidt, & Vaden [1990]).

Measures of peer relations were drawn from peer nominations. Group sociometric testing was conducted in each participating classroom by an adult experimenter, with one or two aides, according to the widely used procedures described by Coie, Dodge, & Coppotelli (1982). Children were presented with an alphabetized list of children in their grade and were asked to nominate three children whom they liked most and three whom they liked least. Coding of the sociometric data was accomplished using the criteria and procedures developed by Coie and his colleagues (1982). Standardized liked-most and liked-least scores were computed to derive values for social preference (the difference between standardized liked-most and standardized liked-least nominations) and social impact (the sum of standardized liked-most and liked-least nominations). Children whose

standardized social preference scores were less than -1.0, whose z scores for liked-most were less than 0, and whose z scores for liked-least were greater than 0 were classified as sociometrically rejected; for purposes of this report, all other children were classified as "not rejected."

Following the completion of the sociometric testing, each child was asked to complete the Self-Perception Profile (Harter, 1985), a self-report instrument designed to assess children's perceptions of their own competence in various domains. The subscale for global self-worth was used here, which assessed the extent to which children feel good about themselves and are happy with how they are leading their lives (Harter, 1985).

While the sociometric testing was conducted in his or her classroom each year, each teacher was individually interviewed in a separate room. For the teacher interview, the interviewer read each item aloud and recorded the teacher's response. Teacher ratings of behavior problems for each child were collected at this time. Teachers were also asked to rate each child's mother on involvement in her child's education, using a five-point scale; higher scores indicated greater involvement (for details, see Kupersmidt et al., 1990).

Categorization of Family Income Levels

Children were identified as coming from a low-income family in any year that they were receiving federally mandated free or reduced-price lunches at school. Use of this particular criterion has a number of advantages. First, receipt of free or reduced-price lunches represents a salient indicator of the economic dimensions of children's lives in their school environments; as such, the criterion makes sense in the context of children's experiences. Second, the criterion represents federally mandated income cut-off points, just above poverty levels, that are adjusted for family size; as such, its use as a criterion is appropriate for children from both small and large families, and it yields results that are readily comparable with those of research conducted in other parts of the country. Third, this is an indicator that is available in school records; as such, it can be collected for

every child participating in the study. Thus, all children who should have been categorized as coming from a low-income family were categorized as such.

RESULTS

Economic Stress, Gender, Ethnicity, and Children's School-Based Competence

The main data analyses were designed to describe the course of psychosocial and academic development among children experiencing persistent, intermittent, or no family economic stress during the study period. A series of 3 (economic stress: persistent, intermittent, none) x 2 (gender: male, female) x 2 (ethnicity: white, black) multivariate analyses of variance (MANOVA's) for repeated measures were conducted on the scores for each of the five main dependent measures (academic achievement, peer relations, externalizing behavior problems, internalizing behavior problems, and self-esteem). To clarify significant main effects and interactions, follow-up Student-Newman-Keuls tests were conducted, with the alpha level set at .05.

Academic Achievement. The MANOVA for academic achievement test scores revealed main effects for family economic stress, $F(2, 136) = 7.91, p < .001$; ethnicity, $F(1, 136) = 7.83, p < .01$; and year, $F(3, 134) = 17.03, p < .001$. Children who experienced no family economic stress had higher scores than those who experienced intermittent family economic stress, who in turn had higher scores than those who experienced persistent family economic stress. As the data in Table 2 reveal, this result held true in each year of the study. In addition, white children scored higher than did black children, and children scored higher overall in the earlier years of the study.

These main effects were qualified by a significant interaction between family economic stress and year, $F(6, 268) = 2.96, p < .05$. Examination of the means for this interaction revealed that the decline in achievement test scores over time was affected by family economic stress. As shown in Figure 1, the scores of children who experienced family economic stress declined more during the

TABLE 2

**Mean National Percentile Composite Academic Achievement Test Scores
as a Function of Year and Family Economic Stress**

Year	No Economic Stress (n = 67)		Intermittent Economic Stress (n = 39)		Persistent Economic Stress (n = 42)		F(2,147)=
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
1986	70.61 ^a	27.18	54.82 ^b	26.82	47.19 ^b	20.37	3.05*
1987	70.75 ^a	24.65	50.77 ^b	22.10	45.33 ^b	17.12	5.61**
1988	70.01 ^a	25.99	44.72 ^b	25.46	34.38 ^c	16.98	9.84***
1989	65.43 ^a	28.72	42.28 ^b	26.69	31.81 ^c	15.70	9.99***

Note: Data from Charlottesville Longitudinal Study. Within rows, means that do not share the same superscript differ significantly from one another at $p < .05$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

DECLINE IN ACHIEVEMENT TEST SCORES AS A FUNCTION OF FAMILY ECONOMIC STRESS

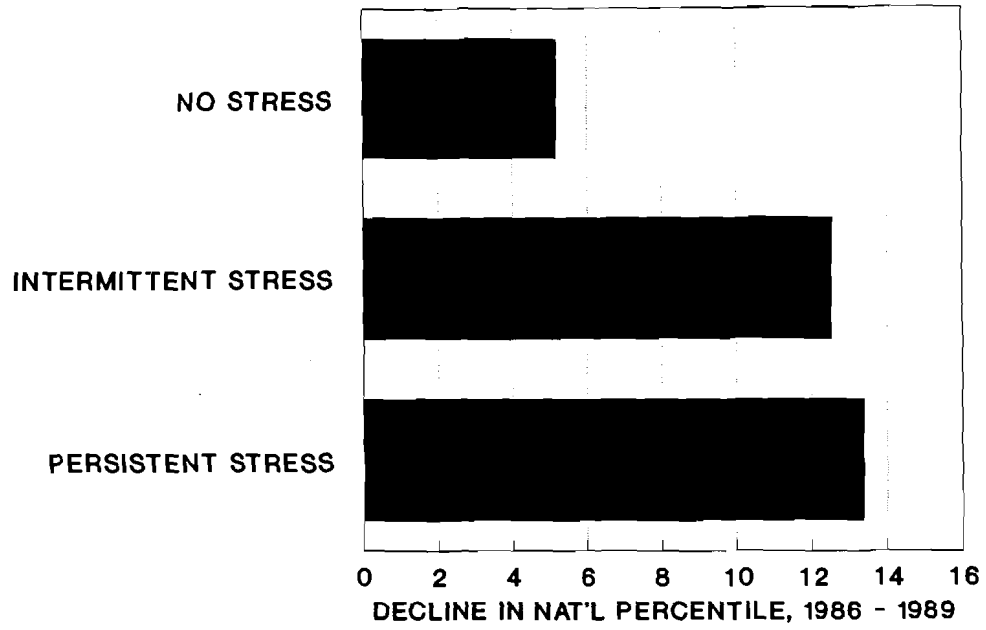


FIGURE 1

period of the study than did those of other children. The scores of children experiencing persistent family economic stress dropped by 13 national percentile points over this four-year period, while those of children experiencing no such stress dropped less than 5 national percentile points. Thus, in terms of academic achievement, students from families that experienced persistent economic stress not only started out behind their more affluent peers but also fell further behind over time.

Peer Relations. The MANOVA for standardized social preference scores revealed main effects for family economic stress, $F(2, 496) = 18.97, p < .001$, and ethnicity, $F(1, 496) = 7.43$. Children who experienced no family economic stress were more popular among their peers than were children who experienced intermittent or persistent family economic stress. As the data in Table 3 show, this result held true in each year of the study. White children were more popular than black children, and girls were more popular than boys. None of the interactions were significant. Thus, the greater popularity of children from more affluent families was consistent over the period of the study.

Externalizing Behavior Problems. Results of the MANOVA for externalizing behavior problems revealed main effects for family economic stress, $F(2, 485) = 17.55, p < .001$; gender, $F(1, 485) = 62.65, p < .001$; and ethnicity, $F(1, 485) = 5.43, p < .05$. Children who experienced persistent family economic stress showed greater externalizing behavior problems than did those experiencing intermittent family economic stress, who in turn had higher scores than those experiencing no family economic stress. As the data in Table 4 reveal, these results held for each year of the study; note, however, that in the last year, there was little difference between intermittent and persistent economic stress. The other main effects revealed that boys had higher scores for externalizing problems than did girls, and that black children had higher scores than white children.

These main effects were qualified by three significant interactions. The most interesting of these was a significant interaction for family economic stress x gender, $F(2, 485) = 5.82, p < .01$.

TABLE 3

Mean Standardized Social Preference Scores as a Function of
Year and Family Economic Stress

Year	No Economic Stress (n = 260)		Intermittent Economic Stress (n = 122)		Persistent Economic Stress (n = 128)		F(2,509)=
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
1986	.30 ^a	.93	-.09 ^b	.87	-.21 ^b	.98	18.12***
1987	.30 ^a	.89	-.04 ^b	.85	-.19 ^b	1.11	11.50***
1988	.28 ^a	.91	-.13 ^b	1.03	-.10 ^b	1.08	11.89***
1989	.27 ^a	.94	-.01 ^b	.96	-.21 ^b	1.03	7.49***

Source: Author's calculations based on Charlottesville Longitudinal Study.

Note: Within rows, means that do not share the same superscript differ significantly from one another at $p < .05$.

*** $p < .001$.

TABLE 4

**Mean Externalizing-Behavior-Problem Scores
as a Function of Year and Family Economic Stress**

Year	No Economic Stress (n = 253)		Intermittent Economic Stress (n = 117)		Persistent Economic Stress (n = 127)		F(2,496)=
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
1986	7.19 ^a	3.42	8.40 ^b	4.71	10.41 ^c	5.56	13.10***
1987	7.32 ^a	3.79	8.60 ^b	5.11	10.09 ^c	5.11	7.75***
1988	6.96 ^a	3.61	8.47 ^b	4.79	9.63 ^c	4.86	9.85***
1989	6.35 ^a	2.89	8.56 ^b	5.37	8.84 ^b	5.23	12.99***

Source: Author's calculations based on Charlottesville Longitudinal Study.

Note: Within rows, means that do not share the same superscript differ significantly from one another at $p < .05$.

*** $p < .001$.

The means for this interaction are depicted in Figure 2, and they reveal that gender differences in externalizing-behavior-problem scores are greatest for children experiencing persistent family economic stress. Among girls, differences in externalizing problems between those who did and did not experience continued family economic stress were relatively small. Among boys, however, externalizing behavior problems were much greater among those experiencing persistent family economic stress than among those who experienced no such stress. Thus, the connection of persistent economic stress with children's externalizing behavior in this sample was more important for boys.

There was also a significant interaction of family economic stress and ethnicity, $F(2, 485) = 6.53, p < .01$. The externalizing problems of black and white children did not differ when there was no family economic stress, nor did they differ when there was persistent family economic stress. When families experienced intermittent economic stress, however, black children had higher scores for externalizing behavior problems.

Finally, there was also a significant gender x ethnicity x year interaction, $F(3, 483) = 3.52, p < .05$. Examination of the mean scores for this interaction revealed that only black boys showed a significant decline in externalizing-behavior-problem scores over the time of the study. The scores for other subgroups remained at a constant level throughout the study.

Internalizing Behavior Problems. Results of the MANOVA for internalizing behavior problems revealed a main effect for family economic stress, $F(2, 582) = 9.31, p < .001$. Children who experienced persistent family economic stress had higher scores for internalizing behavior problems than did those who did not experience family economic stress. As can be seen in Table 5, however, the effect of persistent family economic stress was significant in only two years of the study. In 1986 and 1987, children in families experiencing persistent economic stress had higher scores for internalizing behavior problems than did those in families who experienced intermittent or no such stress. In 1988 and 1989, however, there was no significant effect of family economic stress

MEAN EXTERNALIZING SCORES AS A FUNCTION OF GENDER AND FAMILY ECONOMIC STRESS

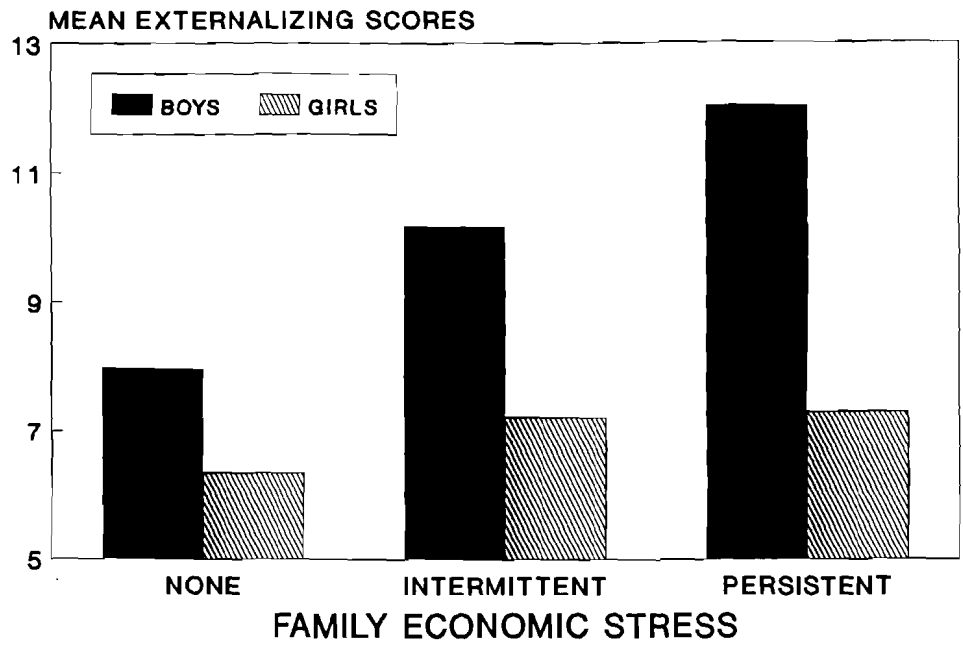


FIGURE 2

TABLE 5

**Mean Internalizing-Behavior-Problem Scores
as a Function of Year and Family Economic Stress**

Year	No Economic Stress (n = 251)		Intermittent Economic Stress (n = 116)		Persistent Economic Stress (n = 127)		F(2,493)=
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
1986	5.23 ^a	1.95	5.56 ^b	2.20	6.16 ^b	2.66	9.58*
1987	5.02 ^a	1.85	5.51 ^b	2.20	5.96 ^b	2.27	10.90***
1988	5.30	1.94	5.38	2.09	6.09	2.47	2.71
1989	5.16	2.19	5.45	2.16	5.57	2.36	1.76

Source: Author's calculations based on Charlottesville Longitudinal Study.

Note: Within rows, means that do not share the same superscript differ significantly from one another at $p < .05$.

* $p < .01$.

*** $p < .001$.

on internalizing-behavior-problem scores. The connection between family economic stress and internalizing problems was thus less consistent than that between externalizing behavior problems and family economic stress.

This main effect was qualified by a significant family economic stress x ethnicity x year interaction, $F(6, 960) = 2.29, p < .05$. Examination of the data for this interaction revealed that although most children's ratings for internalizing behavior problems remained stable over the entire period, those of white children whose families experienced persistent economic stress actually declined during this period of time.

The gender x ethnicity x year interaction was also significant, $F(3, 480) = 5.36, p < .01$. Consistent with results for externalizing behavior problems, the data revealed that the greatest decline in scores over the study period occurred among black boys. Whereas the internalizing-behavior-problem scores for other subgroups remained stable over time, those for black boys showed a significant decline.

Self-Esteem. Results of the MANOVA for self-esteem scores yielded main effects for family economic stress, $F(2, 269) = 11.31, p < .001$, and for year, $F(3, 267) = 3.54, p < .05$. Children who experienced no family economic stress reported higher self-esteem than did children who experienced persistent economic stress. As the data in Table 6 show, this result held true in each year of the study. Self-esteem scores generally rose during the period of study, so that children reported higher mean self-esteem scores in 1989 than they had in 1986.

These main effects were qualified by a family economic stress x gender x year interaction, $F(6, 534) = 3.77, p < .01$. Examination of the data for this interaction revealed that although most children's self-esteem scores increased over the period of study, those for boys experiencing persistent family economic stress decreased. As shown in Figure 3, boys whose families experienced persistent economic stress were the only subgroup to show a decline in self-esteem.

TABLE 6

Mean Self-Esteem Scores as a Function of Year and Family Economic Stress

Year	No Economic Stress (n = 152)		Intermittent Economic Stress (n = 64)		Persistent Economic Stress (n = 65)		F(2,280)=
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation	
1986	3.30 ^a	.60	3.21 ^a	.62	2.93 ^b	.62	6.88**
1987	3.26 ^a	.63	3.11 ^a	.62	2.83 ^b	.68	4.50*
1988	3.36 ^a	.60	3.23 ^{a,b}	.65	3.05 ^b	.62	5.30**
1989	3.43 ^a	.58	3.31 ^a	.62	3.00 ^b	.67	7.68***

Source: Author's calculations based on Charlottesville Longitudinal Study.

Note: Within rows, means that do not share the same superscript differ significantly from one another at $p < .05$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

CHANGES IN SELF-ESTEEM SCORES AS A FUNCTION OF GENDER AND ECONOMIC STRESS

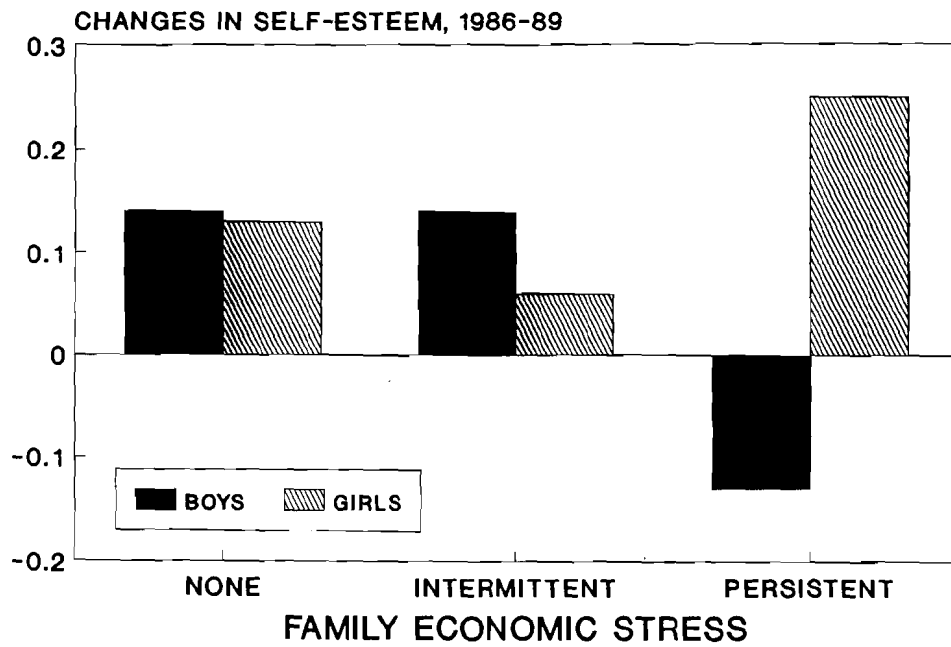


FIGURE 3

Role of Maternal Involvement and Household Composition

In addition to assessing the differences in psychosocial outcomes among children experiencing differing levels of poverty, the present study examined factors that might link family economic stress to child outcomes. To test the hypothesis that parental behavior mediates linkages between family economic stress and child outcomes, a multivariate analysis of covariance strategy was used. For each of the five dependent variables (academic achievement, peer relations, externalizing and internalizing behavior problems, and self-esteem), a repeated-measures MANCOVA was conducted, with averaged teacher ratings of the mother's involvement serving as the covariate. In each of the four assessments, classroom teachers had rated the mother's involvement in the child's educational development on a five-point scale. These ratings were averaged across time to create mother-involvement scores used here. For each dependent variable, all independent variables and those interactions that were statistically significant in the earlier MANOVA were included in each model.

Because children experiencing family economic stress were more likely to come from single-parent homes, the role of household composition (i.e., one- versus two-parent homes) was also evaluated. To address this issue, household composition as a covariate in the repeated-measures MANCOVA's was included. Household composition failed to predict child outcomes significantly in any of the models; it is thus unlikely that the main results are due to confounding of household composition with the other independent variables.

Academic Achievement. With mother involvement and household composition included as covariates, the effects of family economic stress, ethnicity, and the interaction between family economic stress and year were no longer significant. Children whose mothers were rated as highly involved with them had higher scores for academic achievement. Mother involvement was the only significant between-subjects main effect, $F(1, 126) = 29.35, p < .01$.

Peer Relations. When the effect of mother involvement was included in the model, effects of family economic stress and ethnicity were no longer significant. Mother involvement had the only significant effect, $F(1, 488) = 8.43, p < .01$. Again, children whose mothers were rated as highly involved were more popular.

Externalizing Behavior Problems. Higher levels of maternal involvement were associated with lower levels of externalizing behavior problems, $F(1, 475) = 8.92, p < .01$. The effect of gender remained significant, $F(1, 475) = 9.05, p < .01$. When mother involvement was included in the model, the main effects of poverty status and ethnicity were no longer significant. However, all three of the previously significant interactions involving family economic stress remained significant, even after accounting for mother involvement [family economic stress x gender: $F(2, 475) = 3.14, p > .05$; family economic stress x ethnicity: $F(2, 475) = 5.22, p > .01$; gender x ethnicity x year: $F(3, 473) = 3.59, p < .05$].

Internalizing Behavior Problems. Maternal involvement was also associated with children's internalizing behavior, $F(1, 472) = 9.62, p < .01$. When the effect of mother involvement was included in the model, family economic stress was no longer a significant predictor of internalizing behavior problems. Ethnicity, however, emerged as a significant predictor of internalizing behavior problems, $F(1, 472) = 9.41, p < .01$. The interaction of gender, ethnicity, and year remained significant, $F(3, 470) = 4.57, p < .01$, as did the interaction among family economic stress, ethnicity, and year, $F(6, 940) = 2.56, p < .05$.

Self-Esteem. Higher levels of maternal involvement were related to higher self-esteem among children, $F(1, 259) = 14.16, p < .001$. When the effect of mother involvement was included in the model, the effects of family economic stress and year were no longer significant. However, the interaction of family economic stress, gender, and year remained, $F(6, 514) = 2.43, p < .05$.

DISCUSSION

Considerable interest has focused in recent years on the distinction between persistent and intermittent economic stress, and on the implications of both for child development (Duncan & Rodgers, 1988; Huston, 1991; McLoyd, 1990). Because most research to date has been cross-sectional in nature, however, it has not allowed a full understanding of the effects of family economic stress on children over time (Featherman et al., 1988). By studying both family economic hardship and child outcomes over a significant period of time, the present study described associations between persistent and intermittent family economic stress and different aspects of children's school-based competence over time.

The results reported herein document a remarkable range of difficulties encountered at school by children whose families experienced persistent economic hardship during the period of the study. Children from families that experienced persistent economic stress started out behind other children on every measure of school-based competence that was collected, and stayed behind them throughout the years of the study. In terms of academic achievement, children from families that experienced continued economic hardship also fell further behind their peers over time. In every case, the greatest difficulties in adjustment were shown by children whose families experienced persistent economic disadvantage, followed by those whose families experienced intermittent economic stress; the fewest difficulties were shown by those whose families did not undergo economic hardship. The results thus revealed that children exposed to persistent economic stress are less well adjusted across a spectrum of assessments collected in the school environment.

Because family economic circumstances, ethnicity, and household composition were themselves interrelated, the effects of each variable were separated out. Negative outcomes exhibited by children with persistent family economic stress occurred even after evaluating statistically the separate and interactive contributions of ethnicity and household composition. Thus, it was economic

status *per se* rather than ethnicity or household composition that was linked most strongly to child outcomes in the sample.

Consistent with findings from a large body of research, the present study revealed that during childhood, boys are more affected than girls by family economic stress (Elder, 1979; Hartup, 1983; Hetherington et al., 1983; Patterson, Kupersmidt, & Vaden, 1990; Rutter & Garmezy, 1983). For instance, the association between persistent family economic stress and externalizing behavior problems was greater for boys than for girls. Also, while self-esteem rose somewhat among other children during the period of this study, it declined among boys who experienced persistent economic stress. To the extent that there were gender differences in response to persistent economic hardship, boys had more difficulties than girls.

In accord with suggestions from a number of investigators (Conger et al., 1992; Elder, 1979; Elder et al., 1992; Lempers et al., 1989; McLoyd, 1990) and with previous findings from cross-sectional analyses (Kupersmidt et al., 1990), the present study found that the linkage of economic hardship and children's school-based competence was mediated by parental involvement. Scores for maternal involvement accounted for the significant linkages between family economic stress and aspects of children's competence at school. When maternal involvement in children's educational progress was statistically controlled for, the significant effects of economic variables disappeared. Thus, in the present case as in others (e.g., Conger et al., 1992; Lempers et al., 1989), the impact of economic stressors on children appeared to be filtered through their parents.

Although the present results are fully consistent with family mediation models such as those proposed by Conger and his colleagues (1992) and by McLoyd (1990), they by no means rule out other interpretations. Low maternal involvement might be a result of economic stress and its sequelae, but its origins might also be elsewhere. For instance, Zill, Moore, Nord, & Stief (1991) found that most long-term recipients of welfare scored low on tests of intelligence and that most had

not graduated from high school. Maternal-involvement scores are predicted by mothers' own levels of educational attainment, which are in turn predicted by intelligence test scores (Stevenson & Baker, 1987). In short, maternal characteristics may contribute to, as well as result from, family economic circumstances, and the influence processes are likely to be complex. Further specification of processes involved in the linkages between economic hardship, parental behavior, and child outcomes is an important task for future research.

From a methodological standpoint, some concerns about the criterion used here for family economic stress might be noted. Despite its many strengths, the criterion might have omitted children from some low-income families who were eligible for but did not participate in the subsidized school-lunch program. Inclusion of low-income children in the no-stress group, however, would have worked against both the expectations of the present study and the main trends of its results. To the extent that this occurred, then, the present study provided a conservative test of its main expectations. The fact that the study's hypotheses were confirmed despite the conservatism inherent in its methods adds to confidence in the results.

Another important issue of interpretation rests on a distinction between the extent of economic hardship, on the one hand, and its persistence over time, on the other. Were the study's results attributable to greater hardship (e.g., lower family incomes) among families coded as experiencing persistent economic stress, to the persistence of their difficulties, or to both? Because detailed information about family incomes was not available, this question could not be directly addressed. In many cases, however, the extent and persistence of family economic difficulties can be expected to go together. Indeed, the idea of an underclass was proposed to describe the existence of a group characterized by significant economic difficulties extending over substantial periods of time (Auletta, 1982; Wilson, 1987). In the present study, it seems likely that both the extent and persistence of economic pressures are important factors underlying the results. To address this issue more directly,

however, future research should include more detailed measures of family income (cf. Elder et al., 1992).

In summary, the findings reported herein provide an important assessment of the psychosocial outcomes associated with persistent family economic stress for children. Whereas much previous research in this area has been cross-sectional in nature, has focused primarily on white children, and has assessed the impact of episodic rather than chronic economic stress (McLoyd, 1989, 1990), the present study evaluated outcomes associated with persistent economic stress among a heterogeneous group of children over a significant period of time. Results showed that for white and black children, whether living in single- or two-parent families, a broad range of negative outcomes were associated with enduring economic hardship. These linkages were accounted for almost entirely by variations in maternal involvement among the groups. Consistent with suggestions made by a number of investigators (Clark, 1983; Conger et al., 1992; Elder, 1979; McLoyd, 1990), the association between economic hardship and children's school-based competence was apparently mediated by processes within the family.

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