

ECONOMIC STRAIN AND ADOLESCENT FUNCTIONING IN AT-RISK
FAMILIES: THE MEDIATING ROLES OF STRESSFUL PARENT/CHILD
RELATIONSHIPS AND STRESSFUL LIFE EVENTS

By

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Abstract

Potential mediators of the relationship between parent perception of economic strain and adolescent self-perception of psychological functioning in adolescents were evaluated across two domains, internalizing problems and personal adjustment. Participants were adolescents selected for an artistic camp for at-risk youth and their families. Potential mediators included parent and adolescent reports of stressful parent-adolescent relationships, and parent and adolescent reports of stressful life events. In this model, parent report of stressful parent-adolescent relationships was a significant mediator. The total effects of the mediational model and other proposed mediators did not significantly mediate the relationship. These results provide additional support to the family stress model that family processes mediate the association between parent's perception of financial hardship and adolescent psychological functioning

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**Economic Strain and Adolescent Functioning in At-Risk Families:
The Mediating Roles of Stressful Parent/Child Relationships and
Stressful Life Events**

Poverty has a profound effect on the psychological functioning of adolescents and their families. Families facing financial hardship endure pervasive stress and are more vulnerable to adverse life events (e.g., eviction, criminal victimization, access to health care (Edin & Kissane, 2010; Evans, 2004; McLoyd, 1990). Financial hardship restricts choices in most life domains; families face constraints on their choices of schools, housing, neighborhood quality, employment, friendships, and leisure activities (Evans, 2004; McLoyd, 1990).

Adolescents who live in poverty and those whose families face financial hardship are profoundly affected by these circumstances. The research findings regarding the deleterious sequelae of poverty and financial hardship have been robust and consistent. Adolescents living in poverty are at greater risk for psychopathology (i.e., externalizing disorders, aggression, internalizing disorders) and impaired functioning (i.e., decreased academic achievement, lower self-esteem, reduced self-efficacy (Compas, Hinden, & Gerhardt, 1995; Conger & Donnellan, 2007; Costello, Compton, Keeler, & Angold, 2003; Edin & Kissane, 2010; McLeod & Shanahan, 1996; McLoyd, 1990, 1998; Yoshikawa, Aber, & Beardslee, 2012).

The association between adolescent psychological functioning and poverty has been well-established and recent research has focused on the mechanisms of risk for adolescents living in poverty (Barnett, 2008; Compas et al., 1995; Grant et al., 2003; Yoshikawa et al., 2012). Current research has focused on the role of stressors. In a comprehensive review, Grant et al. (2003) found that the results of 53 of 60 studies (88%) suggested that exposure to potential stressors was associated with increases in symptoms of psychopathology. Because a mediator variable “accounts for the relation” between independent and dependent variables (Baron & Kenny, 1986, p. 1176), mediational analyses have frequently been used to evaluate mechanisms of risk and assess the relations between specific stressors and adolescent functioning (Barnett, 2008; Compas et al., 1995; Grant et al., 2003; Grant et al., 2006). Poverty, in particular, is a broad, distal risk factor for child and adolescent psychopathology and evaluation of the specific mechanisms through which poverty affects adolescent functioning is particularly well-suited for mediational analyses (Grant et al., 2006; Yoshikawa et al., 2012).

Economic strain. While poverty and financial hardship are significant stressors for families, previous research on mediating stressors has used various data to operationalize these constructs including indicators of social economic status (e.g., Duncan’s or Hollingshead indices or reports of parental education level; Goodman, McEwen, Dolan, Schafer-Kalkhoff, & Adler, 2005; Jackson, Kim, & Delap, 2007), or self-reports of family income or other measures of income (e.g., family eligibility for

free or reduced price school lunches; Gore, Aseltine, & Colten, 1992; Guerra, Huesmann, Tolan, Van Acker, & Eron, 1995). In general, measures of social economic status or income convey less information about the stress and adversity associated with financial deprivation than do more subjective perceptions of the associated hardship (Gershoff, Aber, Raver, & Lennon, 2007; Mistry, Lowe, Benner, & Chien, 2008, Yoshikawa et al., 2012). A number of studies have identified economic strain, the perception that family resources are insufficient to meet family needs, as a mediator of the relation between poverty, low income, and financial hardship and associated family stress and decreased family functioning (Conger et al., 1992; Conger & Donnellan, 2007; Conger, Ge, Elder, Lorenz, & Simons, 1994; Conger et al., 2002; Gutman, McLoyd, & Tokoyawa, 2005; Taylor, Rodriguez, Seaton, & Dominguez, 2004; Wadsworth & Compas, 2002; Wadsworth, Raviv, Compas, & Connor-Smith, 2005).

The concepts of economic strain and perceived financial hardship are especially relevant for poor and low-income families. In the United States, the Department of Health and Human Services issues federal poverty guidelines based on income and family size to determine financial eligibility for government assistance programs (e.g., Head Start, the Food Stamp Program, the National School Lunch Program, the Low-Income Home Energy Assistance Program, and the Children's Health Insurance Program; U.S. Department of Health and Human Services, 2009). Eligibility for these assistance programs frequently requires income within the

guidelines (e.g., \$22,050 for a family of four) or percentage multiples of the guidelines (e.g., 125 percent or 185 percent of the guidelines; U.S. Department of Health and Human Services, 2009). These guidelines have been criticized as flawed and unrealistic; in most areas, an income of at least 200% of the federal poverty threshold is required to meet families' basic needs (Cauthen & Fass, 2008; Gershoff et al., 2007). While both poor and low-income (i.e., within 100-200 % of the federal poverty guidelines) families experience similar financial hardship, poor families may receive more government assistance with food and grocery expenses, children's health insurance, child care, and other needs (Cauthen & Fass, 2008; Gershoff et al., 2007; U.S. Department of Health and Human Services, 2009). For these families, economic strain, the perception that family resources are inadequate to meet the families' needs, generally provides a better measure of financial hardship than income alone.

Stressful life events and adolescent functioning. Exposure to stressful life events has been suggested as a potential risk factor for adolescents experiencing financial hardship. A number of studies have explored the associations between poverty, life stressors, and adolescent psychological functioning. Consistent with the discussion of poverty and adolescent functioning above, these studies suggest that adolescents living in poverty experience more life stressors and that these life stressors are associated with deleterious psychological functioning.

In a large sample of African-American and European-American adolescents, perceived stress was found to be higher among socially disadvantaged adolescents (defined as race/ethnicity or social status; Goodman et al., 2005). Goodman further suggested that race/ethnicity and socioeconomic status serve as risk markers measuring social adversity, rather than intrinsic risk factors; this explanation is similar to those provided by Mistry et al. (2008) and Gershoff et al. (2007) regarding measures of socioeconomic status or income versus subjective perceptions of financial hardship.

Similarly, in a sample of African-American adolescents, high perceptions of stress were associated with both lower levels of parental support and higher levels of anxiety and depression; low perceptions of stress were associated with low levels of anxiety and depression (Schmeelk-Cone & Zimmerman, 2003). Finally, for rural low-income families parent and adolescent reports of life stressors were significantly associated with both internalizing symptoms and economic strain (Wadsworth et al., 2005). While Wadsworth et al. (2005) examined the mediational role of stress-coping resources, the potentially mediating role of life stressors was not evaluated. The results related to positive adolescent functioning may be specific to the particular environment faced by adolescents living in poverty in the United States. For example, in a study of British adolescents, recent life stressors were associated with emotional and behavioral problems, but not with decreases in pro-social behavior (Flouri & Kallis, 2007; Flouri & Tzavidis, 2008).

Several studies have also evaluated the potentially mediating role of adolescent reports of life stressors upon the association between poverty and low income and adolescent psychological functioning and found support for mediation. In a large sample of high-school aged adolescents, life stressors were found to mediate the association between socioeconomic status and depressive symptoms (Gore et al., 1992). In a sample of African-American and European-American families, adolescent reports of stressful life events mediated the association between family household disadvantage (based on socioeconomic status) and self-reports of both anxiety and depression and of self-esteem and self/esteem/perceived competence (Felner et al., 1995). While these studies found that life events mediate the association between socioeconomic status and adolescent functioning, the authors did not include specific measures of financial hardship. Life stressors could further mediate the relation between economic strain and adolescent functioning, an example of the “more fine grained” mediational analysis described by Grant et al. (2003, p. 460) wherein a previously identified mediating variable (e.g., economic strain) becomes a new marker.

Family stress model. In addition to the risks associated with life stressors, financial stress can have a profound effect on parents and, through parents, on adolescents. Research regarding the family influences on children’s and adolescent’s poverty-related sequelae dates back to the Great Depression of the 1930’s (Elder & Caspi, 1988). A significant body of research (i.e., fifteen of sixteen studies identified

in a comprehensive review) has provided evidence that family processes mediate the association between financial hardship and child and adolescent psychological functioning (Grant et al., 2006). Parents who face financial stress are at increased risk of impaired psychological functioning. The pervasive life stressors associated with poverty can emotionally overwhelm parents and increase the risk of psychological disorders and impaired functioning (Conger et al., 1992; Conger et al., 1994; Conger et al., 2002; McLoyd & Jayaratne, 1994; Taylor et al., 2004). Many parents are overwhelmed and unable to parent effectively (Kotchick & Forehand, 2002). In addition, the parenting style of less educated parents, who are disproportionately poor and low-income, tends to be less nurturing and more punitive (Evans, 2004; Kotchick & Forehand, 2002). Even verbal interactions between parent and child vary with socio-economic status; more educated and wealthier parents tend to have more verbal interactions of higher quality and responsiveness with their children (Evans, 2004; Kotchick & Forehand, 2002).

The family stress model, in particular, has identified family processes as mediators of the relation between financial hardship and child and adolescent psychological functioning (Conger et al., 1992; Conger & Donnellan, 2007; Conger et al., 1994; Conger et al., 2002; Elder & Caspi, 1988; Grant et al., 2006). In this model, poverty and financial hardship cause economic strain (e.g., financial insecurity, the perception that available resources are insufficient to meet family needs). Economic strain subsequently increases parents' psychological distress (e.g., depressed mood).

Parents' decreased psychological functioning increases marital conflict and reduces effective parenting (e.g., decreased nurturance, harsh and inconsistent discipline).

While poverty and financial hardship are distally associated with adolescent psychological functioning, economic strain and parental factors mediate the relation.

The results of a number of studies have provided empirical support for this model (Conger et al., 1992; Conger & Donnellan, 2007; Conger et al., 1994; Conger et al., 2002; Elder & Caspi, 1988; Grant et al., 2006).

The impetus for the development of the family stress model was the 1980's farm crisis and the subsequent impact on rural families in Iowa (Conger et al., 1992; Conger & Donnellan, 2007; Conger et al., 1994). Although the original research included a population of rural, primarily European-American families suffering from acute financial stress, the model has also been applied to diverse populations including urban African-American families (Conger et al., 2002; Gutman et al., 2005), African-American mothers (McLoyd & Jayaratne, 1994; Taylor, Seaton, & Dominguez, 2008), and low-income mothers (Raikes & Thompson, 2005).

The family stress model has been found particularly applicable to families with adolescents and a significant body of work has evaluated the family stress model and adolescent functioning in families experiencing financial hardship and poverty. In diverse populations, mediating variables were identified in the association between economic strain and various outcome variables related to adolescent functioning.

Adolescent self-reports of internalizing symptoms (i.e., depressive symptomology, anxiety, and internal distress) have frequently been used as outcome variables when evaluating potential mediators of economic strain. A series of studies has examined this phenomenon with different populations and life situations. In samples of rural, Midwestern two-parent families with adolescent children, identified mediators and associated outcome variables included self-reports of negative parent-child relationships by both parents and adolescents as a mediator of the outcome variable of increased adolescent self-reports of psychological distress (Ge et al., 1992); parent hostility (reported by parents, adolescents, and observers) as a mediator of adolescent self-reports of internalizing symptoms (Conger et al., 1994); and adolescent perceptions of family hardship as a mediator to adolescent self-reports internalizing symptoms (Conger, Conger, Matthews, & Elder, 1999). Similar results have been found in other rural populations. In a sample of rural, primarily European-American families from the Mississippi Delta, adolescent reports of parental hostile behavior mediated the outcome variables of adolescent self-esteem, depressive symptoms, and suicidal ideation (Yoder & Hoyt, 2005) and in a sample of rural New England European-American families, adolescent self-reports of both coping abilities and family conflict mediated the outcome variable of self-report of internalizing symptoms (Wadsworth & Compas, 2002), and coping and responses to stress mediated the outcome variable of a composite measure of parent- and adolescent-reports of internalizing symptoms (Wadsworth et al., 2005).

The family stress model has also been extended beyond rural European-American families. For example, in a sample of single African-American mothers, adolescent perceptions of negative parent-child relationships and maternal reports of punishment mediated the outcome variables of adolescent self-reports of depressive symptoms, anxiety, and cognitive distress (McLoyd & Jayaratne, 1994). Similarly, in a sample of African-American families in inner-city neighborhoods, a composite measure of parent and adolescent reports of both negative and positive parent-child relationships mediated the outcome variable of a composite measure of both parent and adolescent reports of internalizing symptoms (Gutman et al., 2005). An analysis of urban adolescents from high-crime neighborhoods found that adolescent reports of family conflict mediated the relationship between exposure to community violence and adolescent reports of depressive symptoms (Holtzman & Roberts, 2012). A nationally representative sample of African-American families suggested that family stress processes influenced children's psychological adjustment, although the processes differed between African-American and Black Caribbean families (Goosby, Caldwell, Bellatorre, & James, 2011). Finally, the results of a meta-analysis of stressor and child and adolescent psychopathology found that negative parenting mediated the association between poverty and internalizing symptoms, although the results also suggested a direct path between poverty and internalizing symptoms (Grant et al., 2003).

In a parallel line of research, adolescent self-reports of positive functioning (e.g., mastery, self-esteem) have also been used as outcome variables when evaluating potential mediators of economic strain. Many of these were identified simultaneously with the above-described self-reports of internalizing symptoms. Identified mediators and associated outcome variables have included the following: (a) in a population of rural Midwestern two-parent families, observer ratings of parenting behavior mediated the outcome variable of adolescent self-reports of positive functioning (Conger et al., 1992) and adolescent perceptions of family hardship mediated adolescent self-reports of mastery (i.e., self-efficacy; Conger et al., 1999); (b) in a sample of single African-American mothers, adolescent perceptions of economic hardship mediated the outcome variable of adolescent self-esteem (McLoyd & Jayaratne, 1994); (c) in a sample of rural, primarily European-American families from the Mississippi Delta, adolescent reports of parental hostile behavior mediated adolescent self-esteem (Yoder & Hoyt, 2005); (d) in a sample of African-American families in inner-city neighborhoods, parent- and adolescent-reports of both negative and positive parent-child relationships mediated adolescent self-reports of positive adjustment (Gutman et al., 2005); and (e) in a sample of mostly European-American middle to upper SES families, economic strain was associated with increased parental depression and parent-child connectedness mediated the relationship between parental depression and children's pro-social behavior (Carlo, Padilla-Walker, & Day, 2011). These findings provide compelling evidence that the

family stress model describes a means by which economic strain affects adolescent functioning, particularly internalizing symptoms and positive functioning. Further, this model appears to be valid across diverse populations and with various measures of stressful parent child relationships.

The Current Study

The current study attempts to build on the strengths of previous mediator research by incorporating theory-based, incremental tests of mediation, consistent with the recommendations provided by Grant et al. (2006) and conceptual models proposed by Gershoff et al. (2007) and Yoshikawa et al. (2012). Specifically, the current study evaluates potential mediators of the association between parent reports of economic strain and adolescent reports of psychological functioning based on the theoretical framework of the family stress model. Although previous research on stressors related to psychological functioning in children has tended to examine a single mediator variable (Grant et al., 2006), the current study includes four mediators: (a) parent report of stressful parent-adolescent relationships, (b) parent report of stressful parent-adolescent relationships, (c) parent report of stressful life events, and (d) adolescent report of stressful life events. These types of multiple-mediator models are recommended in many research applications (MacKinnon, Fairchild, & Fritz, 2007) and are useful in creating prevention interventions (Yoshikawa et al., 2012).

Previous research based on the family stress model has identified stressful

parent-adolescent relationships as a mediator of the association between economic strain and adolescent self-reports of both internalizing symptoms (Ge et al., 1992; McLoyd & Jayaratne, 1994; Yoshikawa et al., 2012) and positive functioning (Carlo, Padillo-Walker & Day, 2011; Gutman et al., 2005). The present study attempts to replicate these findings. The current study also extends the family stress model by separately evaluating the mediational role of both parent and adolescent reports of relationship stress and by including both parent and adolescent reports of stressful life events.

The outcome variable of adolescent self-perception of psychological functioning was assessed across two domains: internalizing problems (i.e., symptoms of internalizing disorders and internal distress) and personal adjustment (i.e., self-perception of competencies and personal adaptation). The results of previous research suggested that adolescents tend to accurately report their own internalizing symptoms and are often more accurate reporters than parents or teachers (Carlson & Cantwell, 1980; Edelbrock, Costello, Dulcan, Kalas, & Conover, 1985; Kamphaus, DiStefano, & Lease, 2003; Reynolds & Kamphaus, 2004). The current study includes a self-report of internalizing symptoms as an outcome variable as shown in Figure 1.

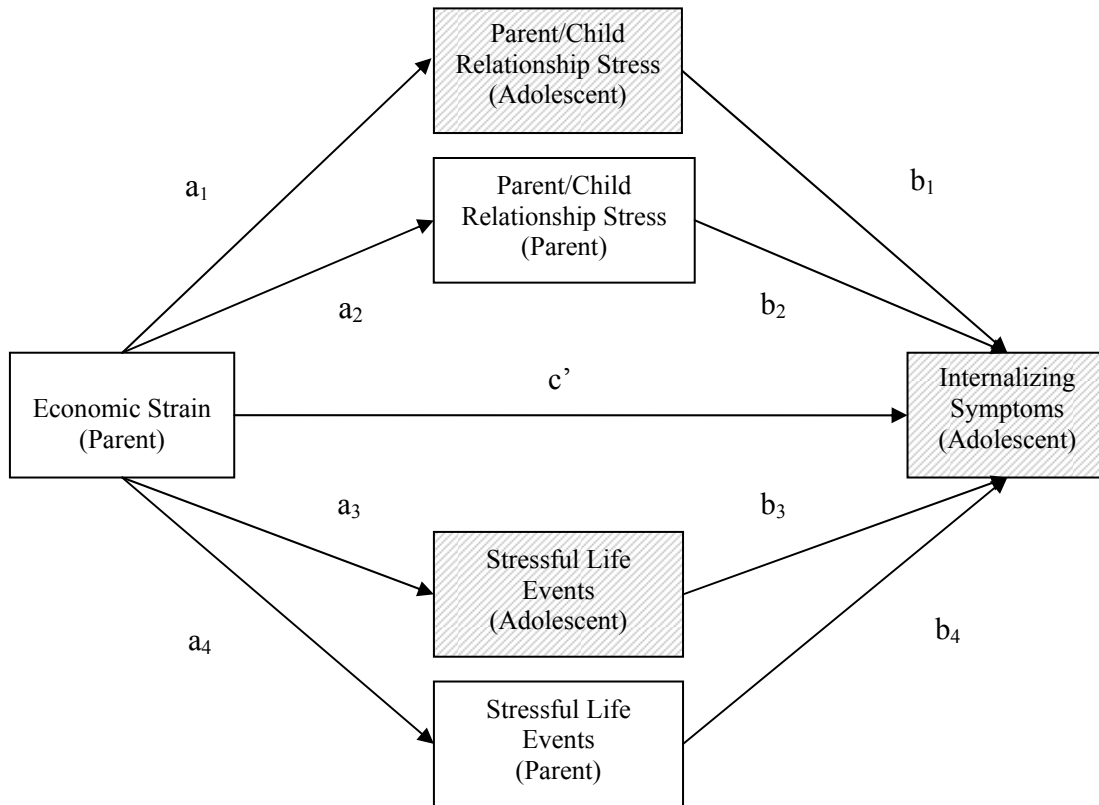


Figure 1. Proposed mediational model for internalizing symptoms. Shaded boxes represent adolescent-reported variables; white boxes represent parent-reported variables.

Further, adolescent functioning cannot simply be characterized as the absence of emotional distress (Kamphaus et al., 2003) and previous research has included both maladaptive and adaptive outcomes in order to fully evaluate adolescent functioning (Yoshikawa et al., 2012; Kim, Jackson, Conrad, & Hunter, 2008). Thus, the current study also includes measures of adaptive behavior as shown in Figure 2.

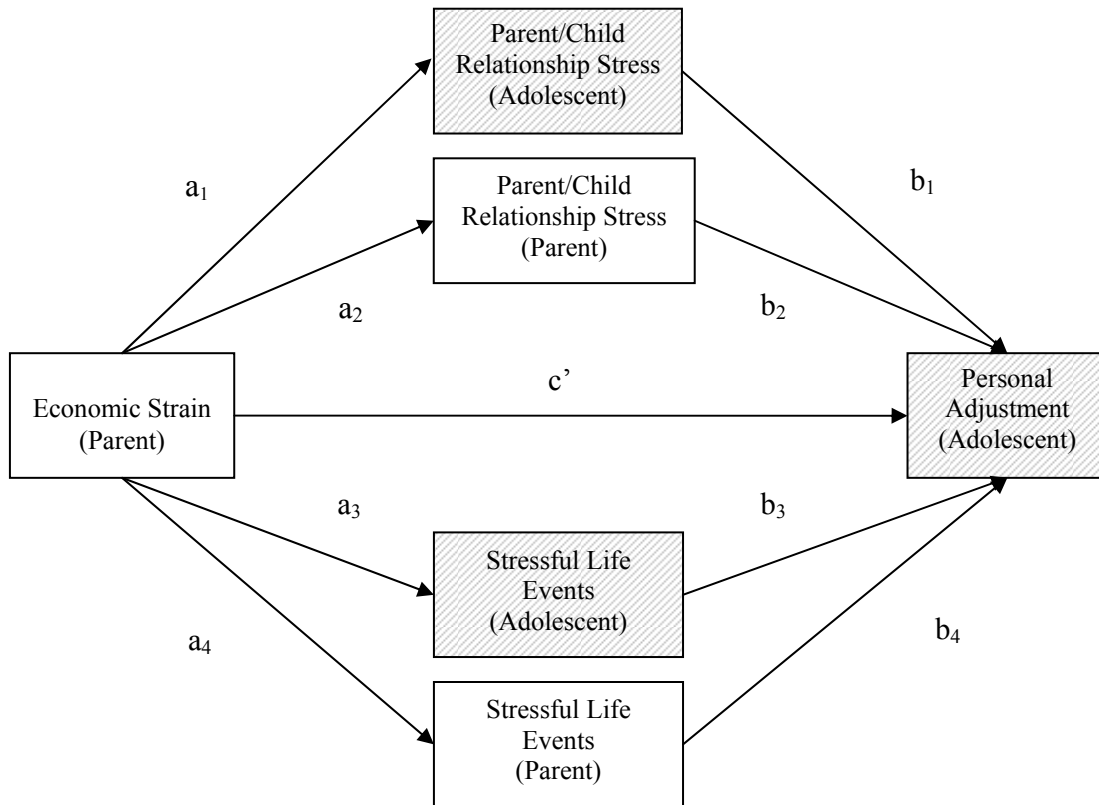


Figure 2. Proposed mediational model for adaptive behavior. Shaded boxes represent adolescent-reported variables; white boxes represent parent-reported variables.

Hypotheses

The current study employs a multiple-mediator model to examine four potential mediators, parent and adolescent reports of stressful life events and parent and adolescent reports of stressful parent-adolescent relationships, on the association between parental perceptions of economic strain and adolescent self-perceptions of psychological functioning (i.e., internalizing symptoms, personal adjustment). In order to assess the multiple mediational model, the following hypotheses were tested:

1. Parent reports of economic strain would be positively associated with

adolescent reports of internalizing symptoms and negatively associated with adolescent reports of positive psychological adjustment.

2. Stressful parent-adolescent relationships, as reported by both parents and adolescents, would be positively associated with parent reports of economic strain.
3. Stressful parent-adolescent relationships would mediate the relation between economic strain and adolescent reports of both internalizing symptoms and positive psychological adjustment.
4. Stressful life events, as reported by both parents and adolescents, would be positively associated with parent reports of economic strain.
5. Stressful life events would mediate the relation between economic strain and adolescent reports of both internalizing symptoms and positive psychological adjustment.

Method

Procedure

The current study was part of a larger data collection project designed to evaluate a six-week summer camp targeting at-risk youth based on home, school, and neighborhood risk factors. This analysis used the data from two successive years of camp sessions. Although other data were collected from parents and caregivers both pre- and post-camp, only the pre-camp data included the current variables.

Participants included parents and their adolescent children, ages 11-14 years. Adolescents from the public middle schools in a major Midwestern city were selected to attend a six-week summer camp targeting at-risk youth based on home, school, and neighborhood risk factors (i.e., ethnicity representative of the city's school district, low socioeconomic status neighborhoods, ethnic minority status within neighborhood, lack of identifiable adult role models, incarcerated family members, nomination by school counselor). Adolescents selected as campers received full scholarships to attend camp. All parents and caregivers of campers were invited to participate in the study during camp orientation meetings. Parents and caregivers who did not attend camp orientation meetings were given the opportunity to participate at the camp office when registering their children for camp. Potential participants were informed that their child's invitation to camp would not be affected by their participation decision. Parents and caregivers who chose to participate were compensated for their time and effort with \$10 gift cards or tickets to a professional dance performance.

Adolescents completed measures during the first few days of camp in a regular personal development class period in groups of 20-50. Adolescents were given a verbal explanation of the study and verbally assented to participation. Researchers read all measures aloud to prevent potential reading-level difficulties. All adolescents participated in the camp evaluation, but data for the present analysis included only those adolescents who verbally assented to the research study and whose parents signed consent forms. This study was reviewed and approved by the

Human Subject Committee of the University of Kansas.

Participants

A total of 175 adolescents attended camp in 2008 and 173 attended in 2009. Adolescents were excluded from the sample if their parents did not consent or the adolescents did not assent to participation, if parents did not choose to complete measures, or if parent and child data could not be matched. Five adolescents from the 2009 camp session reported that they previously attended camp in 2008 and five caregiver surveys reported ages of less than 18 years. These surveys were also omitted from the sample.

Demographics. The final sample consisted of 198 adolescents and their parent or caregiver, with 107 (54.0 %) attending camp in 2008 and 91 (46.0 %) attending camp in 2009. Of the adolescent participants, 169 (85.4 %) were female and 29 (14.6 %) were male. Adolescents ranged in age from 11 years to 16 years with a mean of 12.38 years ($SD = 0.88$). Approximately 154 (77.8 %) described their primary ethnicity as Black or African-American, 14 (7.1 %) as Hispanic or Latino, 12 (6.1 %) as American Indian or Native American, 11 (5.6 %) as White or Caucasian, and 7 (3.5 %) as Other. Program evaluations of the camp from 2008 and 2009 were used to compare sample demographics with demographics of all campers. Sample demographics appeared to be representative of all campers with the exception of a slightly lower percentage of White/Caucasian and Hispanic/Latino campers in the current study.

The majority of adult caregiver participants (88.4 %; $N = 175$) reported being the parent of the adolescent attending camp, and the remaining participants reported being a grandparent (5.1 %; $N = 10$), aunt or uncle (2.0 %; $N = 4$), step-parent (1.5 %; $N = 3$), or other relationship (3 %; $N = 6$). Approximately 82.3% ($N = 163$) of the participants described themselves as Black or African-American, 6.6 % ($N = 13$) as White or Caucasian, 6.6 % ($N = 13$) as Hispanic or Latino, and 4.5 % ($N = 9$) as American Indian or Native American. Adult caregiver ages ranged from 20 to 68 years with a mean age of 39.11 ($SD = 9.4$). Adult participants also reported the highest level of schooling that they had completed with 11 % ($N = 21$) reporting some high school or less, 22 % ($N = 44$) reporting graduation from high school or completion of a GED, 13 % ($N = 26$) reporting graduation from trade school or a community college, 34 % ($N = 68$) reporting completion of some college courses, 14 % ($N = 28$) reporting graduation from college, and 6 % ($N = 11$) reporting completion of a graduate or professional degree.

Adult participants' reports of household size ranged from 2 members to 14 members with a mean of 4.43 members ($SD = 1.78$). Adult participants also reported yearly family income levels, with 13 % ($N = 25$) reporting yearly family income of less than \$10,000, 15 % ($N = 30$) reporting yearly income from \$10,000-\$20,000, 26 % ($N = 51$) reporting yearly income from \$20,000-\$30,000, 23 % ($N = 45$) reporting yearly income from \$30,000-\$40,000, 7 % ($N = 14$) reporting yearly income from \$40,000-\$50,000, 7 % ($N = 14$) reporting yearly income from \$50,000-\$60,000, and

10 % ($N = 19$) reporting yearly income of more than \$60,000. The Federal Poverty Guidelines from 2008 and 2009 for income level and household size (U.S. Department of Health and Human Services, 2008, 2009) were used to calculate the percentage of poor (i.e., within 100% of the poverty threshold) and low-income (i.e., within 200% of the poverty threshold) families. Because caregivers provided income by endorsing a \$10,000-dollar intervals (e.g., \$10,000-\$20,000), it was not possible to definitively determine the poverty level for thresholds that fell within a given range (e.g., a \$14,570 threshold with a reported income of \$10,000-\$20,000). These results were reported as possibly poor or possibly low-income. With regards to income level and family size, 29.3 % ($N = 58$) of families reported information that placed them under 100% of the federal poverty threshold. Similarly, 37.5% ($N = 81$) of families reported income and family size that met federal guidelines for low-income from 100-200% of the poverty threshold), with 28 of these low-income families being possibly under 100 % of the threshold. An additional 15.7% ($N = 34$) of families reported information that may have placed them in the low-income category. In all, only 36 families (16.7%) reported income and family size that did not fall within 200 % of the federal poverty threshold. These results suggest that the majority of participants were experiencing some degree of financial stress.

Measures

Parent demographics. Parents completed the parent demographics form (Appendix A). This measure assessed the participant's gender, age, relationship to the

child, their race/ethnicity, the highest level of schooling they completed, the number of family members in their household, and their yearly family income. This measure also included questions about their children's school grade level and academic grades; these items were omitted from the current analysis.

Adolescent demographics. Adolescents completed the child demographics form (Appendix B). This measure assessed the adolescent's gender, age, race/ethnicity, and previous years at camp. This measure also included questions about academic grades; these items were omitted from the current analysis.

Economic strain. Parents completed the Family Resources Scale (Dunst & Leet, 1987; Dunst, Trivette, & Deal, 1988) in order to assess their perceptions of personal and familial economic strain (i.e., the ability of families to meet their basic needs with the resources available to them). The FRS is a 31-item questionnaire assessing the adequacy of a family's resources to meet their basic needs. Participants rated the availability of needed resources (e.g., food, transportation, medical care) using a 5-point Likert scale ranging from "not at all enough" to "almost always enough." An additional response choice allowed participants to endorse "does not apply" and was coded as 0. The analysis used the sum of the remaining item scores as a measure of total economic strain. For ease of interpretation, the valence of this measure was reversed with higher scores reflected higher levels of economic strain.

The Family Resource Scale has demonstrated adequate reliability and validity across several samples (Brannan, Manteuffel, Holden, & Heflinger, 2006; Dunst &

Leet, 1987; Dunst et al., 1988; Taylor, Crowley, & White, 1993; Van Horn, Bellis, & Snyder, 2001). In a large sample of both lower income and higher income families (Brannan et al., 2006), the FRS demonstrated good internal consistency ($\alpha = .83-.85$) and good criterion validity in the relationship of the FRS to predictor variables (e.g., income, household size). In the current sample, the FRS demonstrated good reliability ($\alpha = .94$). Scores on the FRS ranged from 0-126 with a mean score of 62.3 ($SD = 22.8$).

Stressful parent-adolescent relationships. The stressful parent-adolescent relationships variable was computed by summing parent reports of parenting stress and adolescent reports of family conflict. Parents completed the Stress Index for Parents of Adolescents in order to assess their level of parenting-related stress. The SIPA consists of 112 items that are rated using a 5-point Likert-type scale (Sheras, Abidin, & Konold, 1998). The SIPA yields the Index of Total Parenting Stress (TS), a composite index of total stress experienced from parenting an adolescent. In addition to the composite score, the SIPA measures parental stress across four domains including the External Life Stressors (LS), a measure of environmental stressors and stressful life events (e.g., legal problem, death of loved one); the Adolescent Domain (AD), a measure of stress related to specific characteristics and behaviors of the adolescent; the Parent Domain (PD), a measure of stress related to parental life restrictions, coping abilities, and social support; and the Adolescent-Parent Relationship Domain (APRD), a measure of stress resulting from the quality of the

relationship between parent and adolescent (Sheras et al., 1998). The SIPA was standardized for use with parents of adolescents age 11 to 19 and has demonstrated adequate reliability and validity. The alpha coefficients for the four domains exceed 0.90 and test-retest reliability coefficients ranged from 0.74-0.91 (Sheras et al., 1998). The internal consistency reliability for the APRD in the standardization sample was .91 and the test-retest reliability was .91.

In order to more directly measure parenting stress while avoiding construct overlap and potential overlapping items with the measure of economic strain, items comprising the External Life Stressors subscale (e.g., legal problem, death of loved one), the Adolescent Domain subscale (e.g., specific characteristics and behaviors of the adolescent), and the Parent Domain subscale (e.g., parental life restrictions, coping, social support) were not included in the measure of parenting stress. A Parenting Stress score was computed by summing the sixteen items comprising the Adolescent-Parent Relationship Domain subscale (APRD), a measure of stress resulting from the quality of the relationship between parent and adolescent. In the current sample, the APRD demonstrated acceptable reliability ($\alpha = .83$). Scores on the APRD ranged from 16-49 with a mean scores of 26.8 ($SD = 6.8$).

Adolescents completed the 9-item conflict subscale of the Family Environment Scale (FES) in order to assess their perception of the level of conflict within their own families. The FES conflict subscale has demonstrated adequate internal consistency ($\alpha = .75$) and test-retest reliability ($\alpha = .85$) in the original

standardization sample (Moos & Moos, 1994). Internal consistency was also adequate in samples of adolescents ($\alpha = .72$; Boyd, Gullone, Needleman, & Burt, 1997), at-risk urban adolescents ($\alpha = .67$; Holtzman & Roberts, 2012), adolescents treated for substance abuse ($\alpha = .74$; Nation & Heflinger, 2006), and African-American adolescents ($\alpha = .68$; Overstreet & Braun, 2000). The FES demonstrated good reliability in the current sample ($\alpha = .94$). Scores on the FED ranged from 0-18 with a mean score of 8.3 ($SD = 5.5$)

Stressful life events. Parents completed the SIPA External Life Stressors subscale (as described above), a 22 item measure of environmental stressors and stressful life events (Sheras et al., 1998). The total number of stressful life events endorsed by parents was summed to compute the parent life stress score. In the current sample, the SIPA ELS demonstrated very good reliability ($\alpha = .99$). Scores on the ELS ranged from 0-44 with a mean score of 20.6 ($SD = 19.1$).

Adolescents completed the Life Events Checklist (LEC) (Johnson & McCutcheon, 1980), a measure of exposure to potentially traumatic events, in order to assess recent life stressors (Carothers, Borkowski, & Whitman, 2006; Felner et al., 1995; Jackson, Kim, & Delap, 2007). The LEC consists of 46 potentially stressful life events. Consistent with the procedure used by Jackson et al. (2007), the LEC was modified to be more age-appropriate for the current sample. Seven items were deleted (e.g., “having an abortion,” “losing a job”) and replaced by more age-appropriate stressors (e.g., “getting braces,” “moving to a foster home”). In addition,

two items that directly assess adolescent-parent conflict (e.g., “arguing less with parents,” “arguing more with parents”) were omitted from the analysis due to potential confounding with measures of family conflict. Adolescents endorsed each event that has occurred within the past year and rated endorsed items as positive (“good”) or negative (“bad”). The total number of negative life events, potentially ranging from 0-45, was used as an adolescent measure of stressful life events. The LEC has demonstrated good internal consistency ($\alpha = .91$; Carothers et al., 2006) and test-retest reliability ($\alpha = .72$; $p < .001$) over a two-week period (Brand & Johnson, 1982). In the current sample, the LEC demonstrated good reliability ($\alpha = .90$). Scores on the LEC ranged from 5-82 with a mean score of 15.9 ($SD = 14.8$).

Psychological functioning. Adolescents completed the *Behavior Assessment System for Children (2nd ed.)*, *Self Report of Personality* to assess their self-perception of their own psychological functioning (Reynolds & Kamphaus, 2004). The Self Report of Personality (BASC-II-SRP) is a multidimensional self-report Likert inventory of behavioral and emotional symptoms for children and adolescents. Scores are provided as standardized T scores with a norm-referenced mean of 50 ($SD = 10$). The BASC-II-SRP provides twelve clinical subscales, four adaptive subscales, and four composite scores: Internalizing Problems, Personal Adjustment, School Problems, and the Emotional Symptoms Index. Validity studies have suggested the

BASC-II-SRP also has high construct validity (Reynolds & Kamphaus, 2004; Weis & Smenner, 2007).

Two versions of the BASC-II-SRP are available, a 148-item measure for children age 8-11 and a 176-item measure for adolescents 12-18. Reynolds and Kamphaus (2004) reported a significant amount of item overlap across age levels, yet statistically significant differences were found between age groups. In order to allow the use of T scores for the analysis, the present study used the age-appropriate version based on the age of the child at the beginning of camp. T scores for two of the composite index scores, Internalizing Problems and Personal Adjustment, were used in the current study.

The current study used the Internalizing Problems index T score as a measure of internalizing symptoms and psychological distress. This index is a broad measure of internal distress that includes subscales measuring symptoms of atypical thought, external locus of control, social stress, anxiety, depression, and inadequacy (Reynolds & Kamphaus, 2004). For this index, higher T scores indicate greater symptom endorsement. Internal consistency of the Internalizing Problems index (IP) was high with alpha coefficients of .96 (both for ages 8-11 and ages 12-14) and test-retest coefficients of .82 (both for ages 8-11 and ages 12-14) (Reynolds & Kamphaus, 2004). Scores on the IP ranged from 33-90 with a mean score of 48.8 ($SD = 10.3$).

The Personal Adjustment index was used as a broad measure of positive psychological functioning. This index includes subscales measuring relations with

parents, interpersonal relations, self-esteem and self-reliance (Reynolds & Kamphaus, 2004). In contrast to the Internalizing Problems index, higher T scores indicate positive adjustment. For ease of interpretation, the valence of this measure was reversed with higher scores reflected higher levels of positive psychological functioning. Internal consistency of the Personal Adjustment index (PA) was high with alpha coefficients of .88 (ages 8-11) and .90 (ages 12-14) and test-retest coefficients of .75 (ages 8-11) and .74 (ages 12-18) (Reynolds & Kamphaus, 2004). Scores on the PA ranged from 19-68 with a mean score of 52.2 ($SD = 9.8$).

Results

Correlational Analyses

Zero-order correlations between the study variables are presented in Table 1.

Table 1

Zero-Order Correlations Between Study Variables (N = 198)

	1	2	3	4	5	6	7	8	9	10
1. Child Sex ^a	—									
2. Income ^b	-.142*	—								
3. Family size	.101	-.088	—							
4. ES ^c	.124	-.342**	.145*	—						
5. FES ^d	-.002	.054	.060	-.171*	—					
6. APRD ^e	.116	-.194**	-.016	.393**	-.190**	—				
7. LEC ^f	.038	-.069	-.097	.113	-.502**	.187**	—			
8. ELS ^g	.020	.019	.070	-.161*	.931**	-.188**	-.622**	—		
9. IP ^h	.042	-.119	-.173*	.118	-.052	.232**	.174*	-.055	—	
10. PA ⁱ	-.056	.043	.110	-.127	-.041	-.268**	-.082	-.057	-.694**	—

^a Sex was coded as 1 = *female*, 2 = *male*. ^b Income was coded as 1 = \$10,000 or less, 2 = \$10,000-\$20,000, 2 =

\$20,000-\$30,000, 3 = \$30,000-\$40,000, 4 = \$40,000-\$50,000, 5 = \$50,000-\$60,000, 6 = \$60,000 or more.).

^c Economic Strain (parent report). ^d Family Environment Scale (adolescent report of relationship stress).

^e Adolescent-Parent Relationship Domain (parent report of relationship stress). ^f Life Events Checklist (adolescent

report of stressful life events). ^g External Life Stressors (parent report of stressful life events). ^h Internalizing

Problems (adolescent report). ⁱ Personal Adjustment (adolescent report).

* $p < .05$, ** $p < .01$

The results suggest that several of the study variables were significantly interrelated. Adolescent gender was negatively associated with family income (i.e., families with boys tended to report less income). As predicted, parents' report of increased economic strain was negatively associated with income and positively associated with increased family size and parents' report of family stress. Contrary to

predictions, increased economic strain was negatively associated with adolescent reports of family stress and parent reports of life stressors.

Mediational Analyses

In order to test the proposed mediational model, methods consistent with those employed by Holtzman and Roberts (2012), Jackson and colleagues (2007) and Kim et al, (2008) were employed and the significance of the mediator model was evaluated using the techniques described by Preacher and Hayes (2004, 2008). An SPSS™ module (see www.quantpsy.org) was used to compute total and indirect effects using bootstrapping confidence intervals, while controlling for covariates (Preacher & Hayes, 2008).

Previous research has identified significant gender effects associated with adolescent self-report of internalizing symptoms, with girls reporting higher levels of symptoms after exposure to stressors (Carlson & Grant, 2008; Compas et al., 1995; Grant et al., 2003; Hankin, Stone, & Wright, 2010; Mendelson, Kubzansky, Datta, & Buka, 2008). Adolescent females, including girls from families with low socioeconomic status (Mendelson et al., 2008) or urban African-American families (Carlson & Grant, 2008), tended to report higher levels of internalizing symptoms after exposure to life stressors. Similarly, in a meta-analysis of poverty, parenting, and children's internalizing and externalizing symptoms, Grant et al. (2003) found negative parenting was more strongly associated with internalizing symptoms for girls. Both the artistic focus of the camp (i.e., dance) and previous analyses of camp

data (Bender & Roberts, 2009; Holtzman & Roberts, 2012) suggest that the adolescents in the current sample would be primarily female. Thus, the current study included gender as a covariate during the meditational analysis evaluating internalizing problems.

Similarly, a robust body of research has found a higher risk for psychopathology and impaired functioning among adolescents living in poverty (Compas et al., 1995; Conger & Donnellan, 2007; Costello et al., 2003; Edin & Kissane, 2010; McLeod & Shanahan, 1996; McLoyd, 1990; 1998; Yoshikawa et al., 2012). In the United States, federal poverty guidelines are based upon income and family size (U.S. Department of Health and Human Services, 2009). In this analysis, family income and number of family members were also included as covariates for both mediational analyses.

Tests of mediational models have conventionally used the criteria recommended by Baron and Kenny (1986) and Holmbeck (1997). These criteria include a series of multiple regressions and Sobel tests to evaluate the following hypotheses as shown in Figure 3: (a) variable X is significantly associated with variable Y (i.e., the *c* path), (b) variable X is significantly associated with variable M (i.e., the *a* path), (c) variable M is significantly associated with variable Y controlling for variable X (i.e., the *b* path), and (d) the indirect effect of variable X upon variable Y through variable M is not equal to the null hypothesis of zero (i.e., $c - c' \neq 0$; the Sobel test).

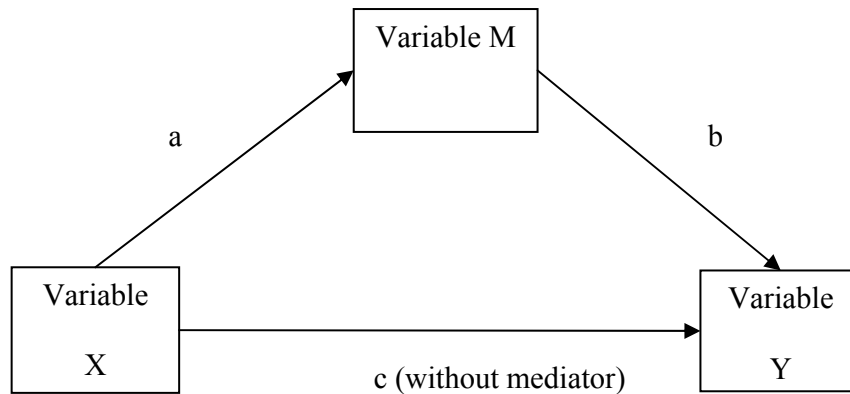


Figure 3. Generic mediational model. Adapted from Preacher and Hayes (2008).

Although the Baron and Kenny (1986) procedure for mediational analysis has a great deal of historical support, the Preacher and Hayes (2008) procedure offers a number of advantages (Preacher & Hayes, 2004, 2008). Rather than directly assessing the significance of the mediational pathway, the Baron and Kenny procedure relies on the Sobel test as a test of mediational significance (Baron & Kenny, 1986); in contrast, the Preacher and Hayes procedure directly tests the significance of the indirect pathway (Preacher & Hayes, 2004, 2008). Reliance on all four criteria may further limit the power to detect significant effects in small to medium samples (Fritz & MacKinnon, 2007; Grant et al., 2006). The first criteria requiring a significant association between the independent and dependent variables may further limit the detection of valid mediators in distally related variables (e.g., poverty and psychopathology; Grant et al., 2006). In addition, the Baron and Kenny procedure

does not allow for the simultaneous analysis of multiple indirect effects while the Preacher and Hayes technique allows the simultaneous analyses (Baron & Kenny, 1986; Preacher & Hayes, 2004, 2008). Finally, the Baron and Kenny procedure imposes the assumption of normality on the sampling distribution, while the Preacher and Hayes technique employs bootstrapping, a nonparametric resampling procedure that allows higher power while controlling Type I error (Baron & Kenny, 1986; Fritz & MacKinnon, 2007; Preacher & Hayes, 2004, 2008).

Preachers and Hayes (2008) further described several benefits related to analyzing a single multiple mediation model rather than separate single mediation models. A single multiple mediation models can reveal the overall effect of the set of mediators. A single model allows the evaluation of a single mediator conditional on the presence of other mediators. Testing multiple mediators in a single model decreases the potential for biased parameter estimates due to omitted variables. Evaluating several moderators in a single model permits comparison of the magnitude of specific indirect effects of mediators, thus allowing theory comparison.

Multiple mediator model for internalizing symptoms. A multiple-mediator model was employed to examine the association between four potential mediators, parent and adolescent reports of stressful life events and parent and adolescent reports of stressful parent-adolescent relationships, on the association between parental perceptions of economic strain and adolescent self-perceptions of internalizing

symptoms (Figure 3). In this model, the Preacher and Hayes SPSS™ macro (2008) was used to estimate path coefficients and generate bootstrap confidence intervals.

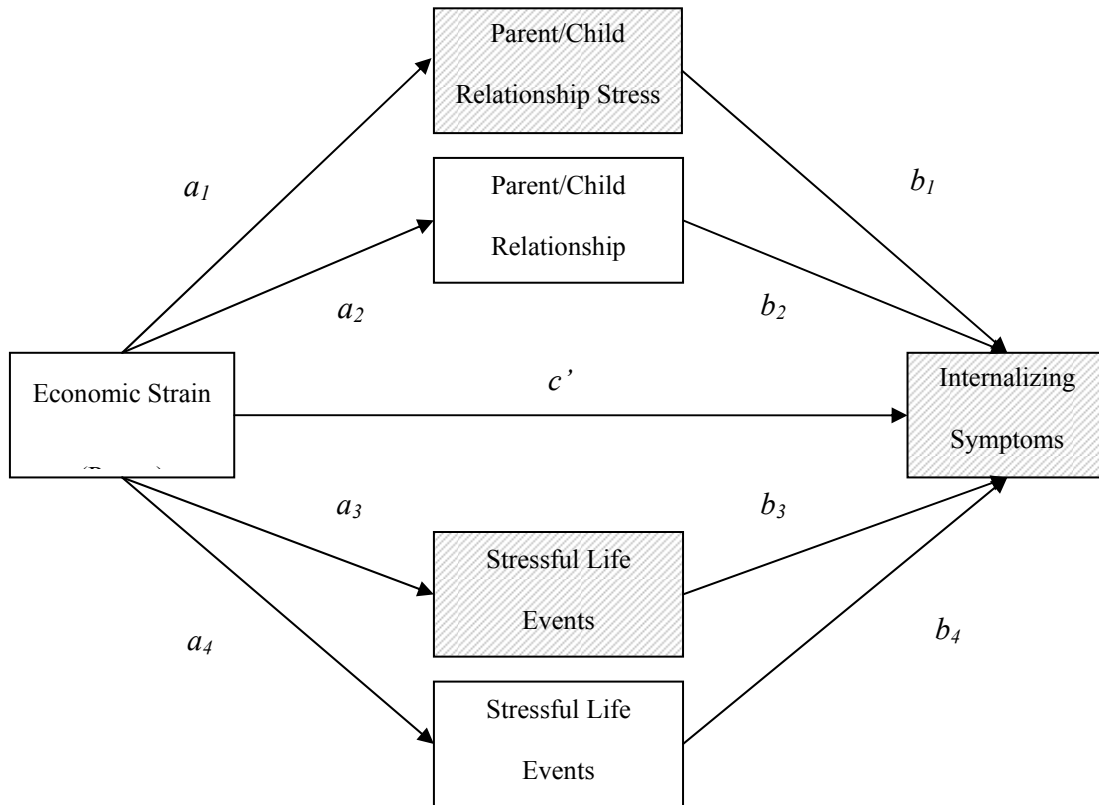


Figure 4. Multiple mediator model for internalizing symptoms. Shaded boxes represent adolescent-reported variables; white boxes represent parent-reported variables.

The results of the bootstrap analysis of the multiple mediator model are presented in Table 2.

Table 2

Bootstrap Results for Indirect Effects of Economic Strain on Adolescent Internalizing Symptoms through Mediators

<i>Model</i>	β <i>(observed)</i>	<i>Bias correction</i>	<i>SE</i>	<u>95% CI</u> <i>Lower Upper</i>	
Model of Indirect Effects through Mediators					
ES ^a → FES ^c → IP ^b ($a_1 b_1$ -path)	.0066	.0001	.0189	-.0285	.0514
ES ^a → APRD ^d → IP ^b ($a_2 b_2$ -path)	.0311	-.0002	.0157	.0065	.0703*
ES ^a → LEC ^e → IP ^b ($a_3 b_3$ -path)	.0101	.0010	.0100	-.0053	.0328
ES ^a → ELS ^f → IP ^b ($a_4 b_4$ -path)	-.0167	-.0006	.0223	-.0732	.0195
-					
ES ^a → Total ^g → IP ^b ($a_{total} b_{total}$ -path)	.0312	.0004	.0178	-.0005	.0701

Note. $N = 198$.

^a Economic Strain (parent report). ^b Internalizing Problems (adolescent report). ^c Family Environment Scale (adolescent report of relationship stress). ^d Adolescent-Parent Relationship Domain (parent report of relationship stress). ^e Life Events Checklist (adolescent report of stressful life events).

^f External Life Stressors (parent report of stressful life events). ^g Total Indirect Effect (Sum of mediator effects)

*Significant confidence interval

These findings suggest that only one mediational pathway, parent perceptions of relationship conflict (APRD), significantly mediated the relationship between parent reports of economic strain and adolescent reports of internalizing symptoms. The total effects of the multiple mediator model did not significantly mediate the relationship between parent reports of economic strain and adolescent reports of internalizing symptoms and the hypothesized multiple mediator model was not significant.

Table 3

Regression Results for the Pathways of the Multiple Mediator Model of the Association between Economic Strain and Adolescent Internalizing Symptoms

<i>Pathways</i>	<i>β (SE)</i>	<i>t</i>	<i>p</i>
Direct Effect			
ES ^a → IP ^b (<i>c</i> '-path)	.0192 (.0360)	.5322	.5952
Pathways			
ES ^a → IP ^b (<i>c</i> -path)	.0503 (.0340)	1.4802	.1404
ES ^a → FES ^c (<i>a</i> ₁ -path)	-.0449 (.0184)	-2.4393	.0156*
ES ^a → APRD ^d (<i>a</i> ₂ -path)	.1124 (.0212)	5.3092	.0000**
ES ^a → LEC ^e (<i>a</i> ₃ -path)	.0742 (.0495)	1.4992	.1354
ES ^a → ELS ^f (<i>a</i> ₄ -path)	-.1583 (.0636)	-2.4900	.0156*
FES ^c → IP ^b (<i>b</i> ₁ -path)	-.1475 (.3683)	-.4004	.6893
APRD ^d → IP ^b (<i>b</i> ₂ -path)	.2768 (.1149)	2.4079	.0170*
LEC ^e → IP ^b (<i>b</i> ₃ -path)	.1360 (.0644)	2.1121	.0360
ELS ^f → IP ^b (<i>b</i> ₄ -path)	.1052 (.1179)	.8925	.3732
Effects of Control Variables			
Child Gender ^g	.3403(2.0433)	.1665	.8680
Family Members ^h	-1.0025 (.4067)	-2.4651	.0146*
Family Income ⁱ	-.4052 (.4388)	-.9235	.3569

Note. *N* = 198.

^a Economic Strain (parent report). ^b Internalizing Problems (adolescent report). ^c Family Environment Scale (adolescent report of relationship stress). ^d Adolescent-Parent Relationship Domain (parent report of relationship stress). ^e Life Events Checklist (adolescent report of stressful life events).

^f External Life Stressors (parent report of stressful life events). ^g Sex was coded as 1 = *female*, 2 = *male* (adolescent report). ^h Number of family members (parent report). ⁱ Income was coded as 1 = \$10,000 or less, 2 = \$10,000-\$20,000, 2 = \$20,000-\$30,000, 3 = \$30,000-\$40,000, 4 = \$40,000-\$50,000, 5 = \$50,000-\$60,000, 6 = \$60,000 or more (parent report).

**p* < .05. ** *p* < .01.

Specific pathways within the model were further evaluated using multiple regression. Results of the remainder of the regression analysis for this model are presented in Table 3. The regression equation was significant, $R^2 = .1135$, adjusted $R^2 = .0759$, $F(8, 189) = 3.02$, $p = .0032$. The effect size was small with the mediating variables accounting for 11.35 % of the variability between economic strain and internalizing symptoms.

These results support the first hypothesis that parent reports of economic strain would be positively associated with adolescent reports of internalizing symptoms. Significant findings include: A negative association between parent reports of economic strain and adolescent reports of family conflict, a positive association between parent reports of economic strain and parent reports of family conflict, a negative association between parent reports of economic strain and parent reports of life stressors, and a positive association between parent reports of family conflict and adolescent reports of internalizing symptoms. Of the control variables, only number of family members had a significant effect upon the mediation model.

Contrary to the prediction of hypothesis two, only parent reports of more stressful parent-adolescent relationships were significantly associated with increased adolescent reports of internalizing symptoms. The finding that increases in parental reports of economic strain were associated with decreased adolescent reports of family conflict did not support the hypothesis. Similarly, contrary to the hypothesized

relationship, parent reports of increased economic strain were associated with decreased parental reports of life stressors.

Multiple mediator model for personal adjustment. A second multiple-mediator model was employed to examine the association between the same four potential mediators, parent and adolescent reports of stressful life events and parent and adolescent reports of stressful parent-adolescent relationships, on the association between parental perceptions of economic strain and adolescent self-perceptions of personal adjustment (Figure 5). The Preacher and Hayes SPSS™ macro (2008) was used to estimate path coefficients and generate bootstrap confidence intervals.

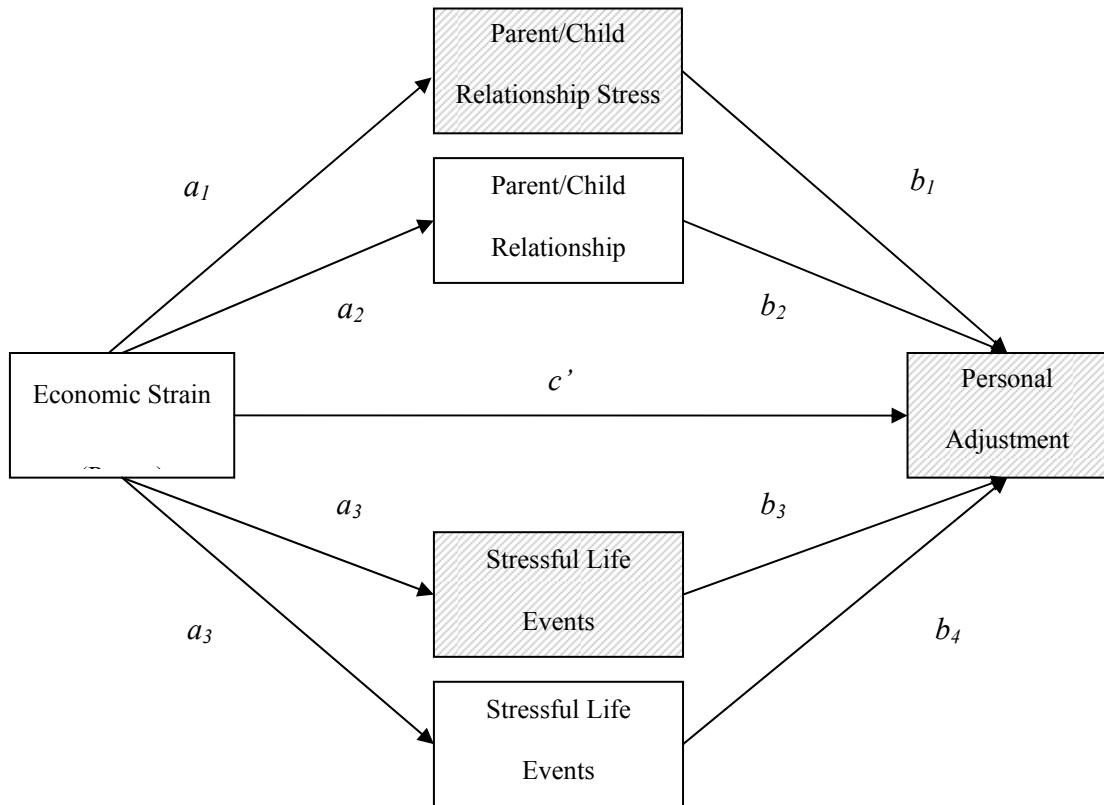


Figure 5. Multiple mediator model for personal adjustment. Shaded boxes represent

adolescent-reported variables; white boxes represent parent-reported variables.

The results of the bootstrap analysis of the multiple mediator model are presented in Table 4.

Table 4

Bootstrap Results for Indirect Effects of Economic Strain on Adolescent Personal Adjustment through Mediators

<i>Model</i>	β <i>(observed)</i>	<i>Bias correction</i>	<i>SE</i>	<u>95% CI</u> <i>Lower Upper</i>	
Model of Indirect Effects through Mediators					
ES ^a → FES ^c → PA ^b (<i>a₁ b₁-path</i>)	-.0132	.0006	.0170	-.0576	.0126
ES ^a → APRD ^d → PA ^b (<i>a₂ b₂-path</i>)	-.0415	-.0004	.0167	-.0817	-.0148*
ES ^a → LEC ^e → PA ^b (<i>a₃ b₃-path</i>)	-.0088	-.0004	.0081	-.0284	.0038
ES ^a → ELS ^f → PA ^b (<i>a₄ b₄-path</i>)	.0311	-.0002	.0223	-.0003	.0943
ES ^a → Total ^g → PA ^b (<i>a_{total} b_{total}-path</i>)	-.0324	-.0004	.0180	-.0721	-.0012*

Note. N = 198.

^a Economic Strain (parent report). ^b Personal Adjustment (adolescent report). ^c Family Environment Scale (adolescent report of relationship stress). ^d Adolescent-Parent Relationship Domain (parent report of relationship stress). ^e Life Events Checklist (adolescent report of stressful life events).

^f External Life Stressors (parent report of stressful life events). ^g Total Indirect Effect (Sum of mediator effects)

*Significant confidence interval

These findings suggest the total indirect effects of this model significantly mediated the relationship between parent reports of economic strain and adolescent reports of internalizing symptoms. Of the four mediational pathways in the analysis, only parent perceptions of relationship conflict (APRD), significantly mediated the relationship between parent reports of economic strain and adolescent reports of

internalizing symptoms. These results also did not support the hypothesized multiple mediator model.

Table 5

Regression Results for the Multiple Mediation Model of the Association between Economic Strain and Adolescent Personal Adjustment

<i>Pathways</i>	<i>β (SE)</i>	<i>t</i>	<i>p</i>
Direct Effect			
ES ^a → PA ^b (<i>c</i> '-path)	-.0297 (.0340)	-.8758	.3823
Pathways			
ES ^a → PA ^b (<i>c</i> -path)	-.0621 (.0326)	-1.9075	.0579
ES ^a → FES ^c (<i>a</i> ₁ -path)	-.0447 (.0183)	-2.4392	.0156*
ES ^a → APRD ^d (<i>a</i> ₂ -path)	.1139 (.0211)	5.3947	.0000**
ES ^a → LEC ^e (<i>a</i> ₃ -path)	.0757 (.0492)	1.5363	.1261
ES ^a → ELS ^f (<i>a</i> ₄ -path)	-.1564 (.0633)	-2.4720	.0143*
FES ^c → PA ^b (<i>b</i> ₁ -path)	.2952 (.3472)	.8503	.3962
APRD ^d → PA ^b (<i>b</i> ₂ -path)	-.3641 (.1083)	-3.3633	.0009**
LEC ^e → PA ^b (<i>b</i> ₃ -path)	-.1156 (.0607)	-1.9193	.0565
ELS ^f → PA ^b (<i>b</i> ₄ -path)	-.1989 (.1110)	-1.7923	.0747
Effects of Control Variables			
Family Members ^g	.6213 (.3826)	1.6240	.1060
Family Income ^h	-.1878 (.4129)	-.4549	.6497

Note. *N* = 198.

^a Economic Strain (parent report). ^b Personal Adjustment (adolescent report). ^c Family Environment Scale (adolescent report of relationship stress). ^d Adolescent-Parent Relationship Domain (parent report of relationship stress). ^e Life Events Checklist (adolescent report of stressful life events).

^f External Life Stressors (parent report of stressful life events). ^g Number of family members (parent report). ^h Income was coded as 1 = \$10,000 or less, 2 = \$10,000-\$20,000, 3 = \$20,000-\$30,000, 4 = \$30,000-\$40,000, 5 = \$40,000-\$50,000, 6 = \$50,000-\$60,000, 7 = \$60,000 or more (parent report).

**p* < .05. ** *p* < .01.

Specific pathways within the model were further evaluated using multiple regression. The regression equation was significant, $R^2 = .1175$, adjusted $R^2 = .0850$,

$F(7, 190) = 3.62, p = .0011$. The effect size, however, was small with the mediating variables accounting for 11.75 % of the variability between economic strain and personal adjustment. Specific regression results for this model are presented in Table 5.

These results also support the first hypothesis that parent reports of economic strain would be negatively associated with adolescent reports of personal adjustment. Significant findings include: A negative association between parent reports of economic strain and adolescent reports of family conflict, a positive association between parent reports of economic strain and parent reports of family conflict, a negative association between parent reports of economic strain and parent reports of life stressors, and a negative association between parent reports of family conflict and adolescent reports of personal adjustment.

As discussed above, several of these findings did not support hypothesized relationships. In contrast, the finding that parent reports of less family conflict were associated with adolescent reports of increased personal adjustment did support the hypothesized relationship.

Power Analysis

Because bootstrapping provides higher statistical power for smaller samples than do other regression-based mediational analyses, power analyses for bootstrapped multiple mediator models are generally based on simulation studies (K. J. Preacher, personal communication, August 14, 2009). Previous simulation studies have found

that power for bootstrapped mediator models is dependent on the strength of effect sizes (Briggs, 2006; Fritz & MacKinnon, 2007). Effect sizes for the relations between economic strain, external life stressors, stressful parent/child relationships, and adolescent internalizing symptoms were estimated based on the results of previous meta-analyses or on the median effect sizes of previous studies investigating these constructs. Estimations of effect size ranged from small to medium using Cohen's classification of effect sizes (Cohen, 1992). After consultation (K. J. Preacher, personal communication, August 14, 2009) and analyses (Briggs, 2006; Fritz & MacKinnon, 2007), we determined that a sample size of 162 would provide adequate power (.80 at the .05 level) for the current study. The current sample size of 198 thus should provide adequate power.

Missing Data

The Preacher and Hayes bootstrap analysis procedure does not support the nested dataset structure of multiple imputation calculated in SPSS™. Because of the multiple benefits provided by the bootstrap analysis procedure, missing data were managed with listwise deletion. Listwise deletion can result in biased parameter estimates and loss of power. These negative outcomes are likely to be inconsequential, particularly in multiple regression procedures, if the number of cases lost to listwise deletion is small (e.g., less than about 5 percent) and the data are missing at random (Graham, 2009). In the current study, missing data ranged from a low of 1.4 % for several items on the Family Environment Scale to a high of 6.5 %

for the BASC Internalizing and BASC Personal Adjustment. The result of Little's chi-square statistic was not significant ($\chi^2(17) = 21.18, p = .218$) suggesting that the data were missing completely at random.

In order to further assess for potential bias with listwise deletion, a 40-iteration fully conditional specification multiple imputation was performed using demographic data, mediational variables, and independent variable as predictors, and the dependent variables as both imputed and predictors. This multiple imputation dataset was compared to the dataset created with listwise deletion. Mean values for the dependent variables were calculated from the original dataset with listwise deletion for both internalizing problems ($M = 48.62$) and personal adjustment ($M = 52.35$). These values differed very little from pooled mean values calculated from the imputed dataset for internalizing problems ($M = 48.60$) and personal adjustment ($M = 52.32$). (Note: SPSS™ does not support the calculation of standard deviation in imputed databases.). Similarly, means and standard deviations of demographic and output variables from the larger database were very similar to those from the smaller database created after listwise deletion. The results of this comparison are presented in Table 6.

Table 2

Comparison of demographic and study variables

	Original Sample N=216			Sample with listwise deletion N=198		
	Minimum	Maximum	M (SD)	Minimum	Maximum	M (SD)
Child Age	11	16	12.39 (0.88)	11	16	12.38 (0.88)
Parent Age	20	68	38.95 (9.2)	20	68	39.11 (9.48)
Family members	2	14	4.50 (1.78)	2	14	4.43 (1.78)
ES ^a	0	126	61.9 (23.3)	0	126	62.3 (22.8)
ELS ^b	0	44	20.7 (19.1)	0	44	20.6 (19.1)
LEC ^c	5	82	15.3 (14.4)	5	82	15.9 (14.8)
FES ^d	0	18	8.2 (5.6)	0	18	8.3 (5.5)
APRD ^e	16	49	26.8 (6.9)	16	49	26.8 (6.8)
IP ^f	33	90	48.6 (10.3)	33	90	48.8 (10.3)
PA ^{g,h}	19	68	52.4 (9.8)	19	68	52.2 (9.8)

^a Economic Strain (parent report). ^b External Life Stressors (parent report of stressful life events). ^c Life Events Checklist (adolescent report of stressful life events). ^d Family Environment Scale (adolescent report of relationship stress). ^e Adolescent-Parent Relationship Domain (parent report of relationship stress). ^f Internalizing Problems (adolescent report). ^g Personal Adjustment (adolescent report).

^h Original Sample N= 202

These analyses suggest that listwise deletion did not result in in biased parameter estimates. Further, the number of cases remaining after listwise deletion provided sufficient power for the Preacher and Hayes bootstrapping procedure. For this analysis, listwise deletion provided the most efficient and correct approach to manage missing data, while still allowing the use of the preferred analytic technique.

Discussion

Poverty is a significant influence on psychological functioning in adolescents and mediational processes can increase understanding of the relationship between poverty and psychological functioning (Grant et al., 2005; Yoshikawa et al., 2012).

The current study evaluated the relationship between parent perception of economic strain and adolescent self-perception of psychological functioning across two domains, internalizing problems and personal adjustment, using two multiple mediator models that included four potential mediators: (a) parent report of stressful parent-adolescent relationships, (b) adolescent report of stressful parent-adolescent relationships, (c) parent report of stressful life events, and (d) adolescent report of stressful life events. The mediational models demonstrated that parent perceptions of stressful parent-adolescent relationships mediated the relationship between parent perceptions of economic strain and adolescent reports of both internalizing symptoms and personal adjustment. Similarly, the total indirect effects of the model significantly mediated the association between parent perceptions of economic strain and adolescent reports of personal adjustment. In contrast, although parent reports of economic strain were associated with increased adolescent reports of internalizing symptoms, the total effects of the mediational model were not significant. Contrary to hypotheses, the other proposed mediators did not significantly mediate the relationship between the independent and dependent variables in either model.

The current study provides additional support to the family stress model with evidence that family processes mediate the association between parent's perception of financial hardship and adolescent psychological functioning (see Conger et al., 1992; Conger, Conger, & Martin, 2010; Gutman et al., 2005; Grant et al., 2003; Carlo, Padilla-Walker, & Day, 2011). Parent reports of increased parent-child relationship

stress mediated the relationship between parent reports of increased financial strain and adolescent reports of both increased internalizing symptoms and decreased personal adjustment. These results are consistent with the findings of previous research applying the family stress model to African-American families (Goosby et al., 2011; Gutman et al., 2005).

The current study, however, included some unexpected results. First, although parent reports of parent-child stress mediated the relationship between adult perceptions of financial stress, adolescent reports of parent-child stress did not. This finding suggests that adolescents perceived the parent-child relationship differently than did their parents. Several previous studies created a total relationship stress variable comprised of both parent and child reports of stressful relationships (Gutman et al., 2005). It is possible that these combined ratings masked differing perceptions of parents and adolescents. The current study, however, used two different measures for parents and children. While differing measures allowed a comparison of the differences between parent and adolescent perception, these measures may not have assessed the same underlying construct. Previous measures of disordered parent-child relationships have included measures of parental hostility (Yoder & Hoyt, 2005), parent-child connectedness (Carlo, Padilla-Walker, & Day, 2011), and family conflict (Wadsworth & Compas, 2002). In addition, informant discrepancies between parent and child reporters are common (De Los Reyes & Kazdin, 2005). In a study of primarily African-American early adolescents, agreement between parent and child

reports of parenting was low and children tended to report lower levels of harsh and inconsistent parenting than did their parents (Guion, Mrug, & Windle, 2009).

Previous literature has suggested that informant discrepancies related to harsh discipline among low-income families may reflect cultural norms in parenting and the perception that strict discipline is adaptive in unsafe neighborhoods (Guion et al., 2009; Deater-Deckard, Dodge, Bates, & Pettit, 1996; De Los Reyes & Kazdin, 2005).

Finally, although the parent/child discrepancy was unexpected, this finding is consistent with the underlying assumption of the family stress model: Financial stress disrupts children's functioning because financial stress impairs parents' ability to parent effectively (Conger, Conger, & Martin, 2010).

The finding that neither parent nor adolescent reports of external life stressors mediated the relationship between economic strain and adolescent psychological functioning was also unexpected. Parent reports of life stressors were negatively associated with economic strain suggesting that an increase in economic stress is associated with a decrease in life stressors. This finding may reflect the increased eligibility for government assistance programs for lower-income families. Additional support provided by these programs may mitigate financial strain for families who qualify for assistance (Cauthen & Fass, 2008; Gershoff et al., 2007). In contrast to parents, adolescent reports of increased life stressors were positively associated with parent reports of financial stress. The differences between parent and adolescent reports may reflect age-appropriate modifications made to the measure or may reflect

uniquely adolescent stressors (e.g., increased social pressure to wear name-brand clothing). Mistry and colleagues (2008) included a qualitative analysis that found families' experiences of economic stress comprised the need for both necessities and "extras." Adolescents may also be more vulnerable to other mediating factors including exposure to violence or neighborhood safety (Bender & Roberts, 2009; Gutman et al., 2005; Holtzman & Roberts, 2012).

The use of a norm-standardized measure of psychological functioning (i.e., *Behavior Assessment System for Children (2nd ed.)*, *Self Report of Personality*; Reynolds & Kamphaus, 2004) allowed the comparison of T-scores of the current sample with a norm-referenced mean of 50 ($SD = 10$). The median scores on measures of both internalizing problems ($M = 48.8$, $SD = 10.3$) and positive adjustment ($M = 52.2$, $SD = 9.8$) were within the normal range. These results suggest that the psychological functioning of these adolescents is similar to that of the normative sample. Although these adolescents in this sample were recruited for the camp intervention based on the presence of multiple risk factors, self-reports indicate that these children generally perceive few problems and many strengths with their own functioning.

The current study presents a number of strengths and implications for future research. The majority of participants were from poor or low-income families. The inclusion of data from both parents and adolescents provided multiple perspectives and a richer understanding of mediating factors affecting families in poverty. Further,

the results are consistent with previous studies suggesting that low-income adolescents perceived parent-child stress as less distressing than did their parents and that adolescent perceptions of parent-child stress are less reflective of parenting difficulties. The results of this study also emphasize the importance of considering models with multiple mediators, particularly mediators that include multiple perspectives. Discrepancies between informants are common. Inclusion of multiple mediators allows researchers to both assess informant discrepancies and may provide both different perspectives about functioning and future directions for research. Future researchers may also consider a measure of adolescent perception of financial stress further assess informant discrepancies. Finally, the inclusion of measures of norm-standardized measures of both internalizing problems and positive adjustment allowed the evaluation of psychological well-being and the implication that most of these children are functioning well, despite the presence of multiple risk factors.

Research building upon this study could consider including independent measures of family income and adolescent psychological functioning, rather than relying solely on self-reports. Further, expanding the focus of research beyond family relational factors to include individual factors (e.g., stress coping, psychopathology) or systemic factors (e.g., neighborhood violence, school quality) could provide more information about the relationship between mediating variables and extend the family stress model. Similarly, a longitudinal design could provide more definitive information about potentially causal relationships. Finally, future research that

includes a sample with similar numbers of boys and girls could allow a comparison of the effect of child gender.

Given the financial stress facing many families today, understanding the factors that affect the psychological functioning of children living in poverty is vitally important. Child poverty rates in the United States have increased from 17 percent in 2006 to 22 percent (16.4 million) in 2010 (Federal Interagency Forum on Child and Family Statistics, 2012; National Center for Children in Poverty, 2012). An additional 22 percent of children live in low-income families (defined as less than 200% of the federal poverty threshold; National Center for Children in Poverty, 2012). Poverty rates are higher for African-American children (39 percent), Hispanic children (35 percent), and children in female-headed families (47 percent; Federal Interagency Forum on Child and Family Statistics, 2012). The pervasive stressors associated with poverty profoundly affect families and children. The problem of children and families living in poverty is growing as more families experience financial hardship. Funding for federal and state programs to alleviate poverty and address correlates of poverty (i.e., assistance with food, housing, childcare, and medical insurance) may be reduced, thus intensifying financial stress experienced by families. Eligibility for government assistance is based on federal poverty guidelines (U.S. Department of Health and Human Services, 2009). Frequently, low-income families who do not qualify for government aid are often unable to meet their basic needs (Cauthen &

Fass, 2008; Gershoff et al., 2007). The number of children in the United States who are living in poverty is growing and programs to alleviate related stressors are not. Targeting interventions and research to address poverty-related risk factors is increasingly important (see Edin & Kissane, 2010; Grant et al., 2006; Yoshikawa et al., 2012).

The family stress model has provided a valuable framework for identification of important mediators associated with poverty and children's functioning. The model's focus on the role of family processes in explaining how poverty-related stress influences children's psychological adjustment provides both an explanation and potential guidance for interventions. Parents experiencing financial stress can have both difficulties maintaining their own psychological well-being and their ability to parent effectively (see, Conger et al., 2002; Kotchick & Forehand, 2002; McLoyd & Jayaratne, 1994; Taylor et al., 2004). The current study replicated these results, although only parent reports of stressful parent-child relationships were a significant mediator. In this case, the consideration of both parent and adolescent self-reports allowed a richer understanding of the processes involved. Similarly, exposure to stressful life events and positive stress coping has been a factor in the psychological adjustment of children living in poverty (see, Goodman et al., 2005; Mistry et al., (2008); Gershoff et al., 2007). In the current study, neither parent nor adolescent reports of life stressors mediated the relationship between financial stress and adolescent functioning suggesting that in this sample stressors were less important.

Poverty affects the psychological functioning of families and adolescents and is associated with a number of risk factors including parenting problems, life stressors, access to healthcare, ineffective schools, and increased crime (Edin & Kissane, 2010; McLoyd, 1990; Yosikawa et al., 2012). The challenge for researchers is moving beyond the broad risk of poverty to identify potential mediators and specific risk factors. Similarly, consideration of positive functioning is important. Living in poverty is not a determination that children will experience psychological dysfunction. Yoshikawa et al. (2012) has recommended that researchers consider both the multi-dimensional nature of poverty and the systemic influences that affect children and families. Similarly, Grant et al. (2003, p. 460) has recommended “more fine grained” mediational analysis wherein a previously identified mediating variable becomes a new marker. Poverty is a broad risk factor is for children with multiple correlates. Understanding the risks of poverty requires research that teases apart mechanisms, correlated risk factors, potential mediators, and protective factors. As economic instability increases and more children live in poverty, the importance of this research increases. Continuing to identifying mechanisms of risk, increase the knowledge base regarding childhood poverty, and plan effective interventions are important considerations. Children and families who live in poverty are profoundly affected; the challenge for researchers is providing a robust research base to support interventions and knowledge about childhood poverty.

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Appendix A

Caregiver Demographic Questionnaire

1. **I am a :**
 - a. Female
 - b. Male

2. **I am _____ years old.**

3. **My race/ethnicity is (Select one or more responses):**
 - a. Asian
 - b. American Indian or Alaska Native
 - c. Black or African American
 - d. Hispanic or Latin
 - e. Native Hawaiian or other Pacific Islander
 - f. Other _____

4. **I am this child's:**
 - a. Parent
 - b. Grandparent
 - c. Step-parent
 - d. Aunt or Uncle
 - f. Other _____

5. **The highest level of schooling I've completed is:**
 - a. Some high school
 - b. High school graduate or GED
 - c. Trade school or community college graduate
 - e. Some college
 - f. College graduate
 - g. Graduate or professional school

6. **My child was in the _____ grade last year:**

7. **In school, my child's grades are:**
 - a. Mostly A's
 - b. Mostly B's
 - c. Mostly C's
 - d. Mostly D's
 - e. Mostly F's

8. **I would like my child's grades to be:**
 - a. Mostly A's
 - b. Mostly B's
 - c. Mostly C's
 - d. Mostly D's
 - e. Mostly F's

9. **The number of people in my family is _____.**

10. **My family's yearly income is:**

- a. \$10,000 or less
- b. \$10,000-\$20,000
- c. \$20,000-\$30,000
- d. \$30,000-\$40,000
- e. \$40,000-\$50,000
- f. \$50,000-\$60,000
- g. \$60,000 or more

Appendix B

Child Demographics Questionnaire

1. **I am a :**
 - a. Female
 - b. Male

2. **I am _____ years old.**

3. **My race/ethnicity is (Select one or more responses):**
 - a. Asian
 - b. American Indian or Alaska Native
 - c. Black or African American
 - d. Hispanic or Latin
 - e. Native Hawaiian or other Pacific Islander
 - f. White or Caucasian
 - g. Other _____

4. **Have you been to AileyCamp before?**
 - a. Yes, in _____ (what year?)
 - b. No

5. **I was in the _____ grade last year:**
 - a. 5th grade or lower
 - b. 6th grade
 - c. 7th grade
 - d. 8th grade
 - e. 9th grade
 - f. 10th or higher

6. **In school, my grades are:**
 - a. Mostly A's
 - b. Mostly B's
 - c. Mostly C's
 - d. Mostly D's
 - e. Mostly F's

7. **I would like my grades to be:**
 - a. Mostly A's
 - b. Mostly B's
 - c. Mostly C's
 - d. Mostly D's
 - e. Mostly F's

8. **I would describe my health as:**
 - a. Excellent
 - b. Very good
 - c. Good
 - d. Fair
 - e. Poor

Informed Consent Form

**AileyCamp Evaluation 2008
Camp Evaluation Permission Slip and Consent Form**

A research team for the Department of Clinical Child Psychology at the University of Kansas is doing a study at AileyCamp. The University of Kansas wants to protect people who take part in research. The following information should help you decide whether you want to take part in this study. You can also decide whether you want your child to take part. You may choose not to take part in the study, but your child can still attend AileyCamp. Even if you agree to participate, you and your child are free to quit the study at any time. Deciding to quit the study or deciding not to take part in the study will not change the services that AileyCamp provides to you and your child. These decisions will not affect your relationship with AileyCamp or with the University of Kansas.

What is the purpose of this study? The reason for this study is to evaluate whether AileyCamp is meeting its goals of enhancing the psychological well-being, self-discipline, and critical thinking skills in high-risk youth. The information will also be used by psychologists to learn more about families' experiences of support, resources, and stress and children's ability to cope with the stressful events in their lives.

What is it like to take part in the study? Both parents (or guardians) and campers can participate in this study. AileyCamp has special times for parents (or guardians) to participate during Parent/Camper Orientation and AileyCamp Final Performance. AileyCampers can fill out surveys at special times during camp. If you or your child do not wish to fill out the surveys, your child will participate in regularly scheduled AileyCamp activities for the same amount of time.

What will I need to do? Parents (or guardians) will be asked to fill out three surveys at the beginning of camp and three surveys at the end of camp. Each set of surveys takes about 35 minutes to complete. These surveys will ask questions about:

- Whether your family has enough resources (such as time, money, energy, jobs) to meet your needs.
- The help your family gets from family, friends, and professionals (such as teachers and social workers).
- The amount of stress that you experience as a parent.
- Your satisfaction with AileyCamp.

The first set of surveys will be included in your registration packet from camp. You can return this consent form and the survey forms during Parent/Camper Orientation. The second set of surveys can be filled out at the AileyCamp Final Performance during intermission or after the performance.

What will my child need to do? Your child will also be asked to complete eleven surveys at

the beginning of camp and during the last days of camp. The surveys for children take about 90 minutes to complete. These surveys will ask your child questions about their:

- Knowledge about and experiences with drugs (cocaine, marijuana), dating relationships (sexual activity), violence (physical and sexual abuse, use of weapons) in their home, neighborhood, and school, and other life events (witnessing suicide or murder, thinking about committing suicide, changing schools or homes).
- Different relationships with family, friends, and other adults in their lives (sexual and physical abuse, violence).
- Abilities to understand and express how they feel.
- Feelings (such as sadness), relationships with others, and possible behavioral problems.
- Satisfaction with AileyCamp.

Are there risks to participating? No risks are expected to result from this study. However, some of the questions may make you or your child feel uncomfortable. If any of the questions do make you or your child feel uncomfortable, you and your child do not have to answer them. You may also quit the study at any time. After answering these questions, you or your child might feel uncomfortable and want to talk with a counselor or support person. If that happens, you will be given a list of contacts who can help.

Will my child and I benefit from participating? You or your child will probably not benefit directly from taking part in this study. However, we hope that this study can help AileyCamp improve. Your answers may lead to a better AileyCamp for future campers. In addition, you and your child will help psychologists at the University of Kansas learn more about how children and families feel and behave.

Is there payment for participating? Each family who completes the surveys at the beginning of camp and at the end of camp will receive a token of appreciation (two \$10 gift cards) to pay them for their time. If you and your child both take part in this study and complete the beginning set of surveys, you (the parent or guardian) will receive a \$10 gift card. If you and your child both complete the last set of surveys, you (the parent or guardian) will receive another \$10 gift card. To choose this option, check box #1 on the last page.

Will the information my child and I provide remain private? Participation in this study is completely confidential (private). This means that your name and your child's name will not be used in any way. Your name and your child's name will not be kept with the information you provide or with the results of this study. All records will be kept in a locked office at the University of Kansas. The researchers will use a study number instead of your name and the papers with your name will be destroyed. All identifying information (like your name) will be removed and replaced with a number before the surveys are scored or reviewed. Because your answers are confidential, no one will be told how you or your child answered the questions. No information will be given to your family, the AileyCamp staff, or the legal authorities. Even if some answers relate to illegal activities (such as drug use), the information will be kept private.

Who decides if my child or I participate? You, the parent (or guardian), will decide whether you and your child take part in the study. You are not required to participate in this

study or to allow your child to participate. You may refuse to take part or refuse to allow your child to take part in the study. Your decision will not affect any services you or your child are receiving now (or may receive in the future) from AileyCamp and the University of Kansas. However, if you refuse to sign this consent form, you and your child cannot participate in this study.

How long does my consent to participate last? If you grant permission on this date to participate, your consent remains in effect indefinitely. In other words, the researchers can use your information for research as long as you do not cancel your consent (see below). When you check boxes 1-3 and sign this form, you give permission for the use and disclosure of your and/or your child's answers for purposes of this study at any time in the future.

What if I decide to quit the study or cancel this consent? You may quit the study or withdraw your consent to participate in this study at any time. You also have the right to cancel your permission to use information collected about you, in writing, at any time by sending your written request to Rochelle James (address below). If you cancel permission to use your information, the researchers will stop collecting additional information about you. However, the research team may use information that was gathered before they received your cancellation, as described above.

What if I have questions about this study? You can contact:

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If you have any questions about your rights as a research participant you may contact the Human Subjects Committee Lawrence Campus (HSCL) office at (785) 864-7429 or (785) 864-7385 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email dhann@ku.edu or mdenning@ku.edu.

KEEP THIS SECTION FOR YOUR RECORDS. IF YOU WISH TO PARTICIPATE, SEPARATE THESE PAGES FROM THE LAST PAGE. RETURN THE ENVELOPE WITH THE LAST PAGE STILL ATTACHED TO THE AILEY CAMP STAFF.

AileyCamp Evaluation 2008

HSCL #17154

PARTICIPANT CERTIFICATION:

Please check only ONE box:

1. **YES—my child and I will both participate in this study.** I agree to take part in this study as a research participant and I give permission for my child to participate in this study as a research participant.
2. **My child will participate, but I don't want to participate.** I give permission for my child to participate in this study as a research participant, but I do not agree to take part in this study as a research participant.
3. **I will participate, but I don't want my child to participate.** I agree to take part in this study as a research participant, but I do not give permission for my child to participate in this study as a research participant.
4. **NO—Neither my child nor I will participate in this study.** I do not agree to take part in this study as a research participant and I do not give permission for my child to participate in this study as a research participant.

Please check just ONE of the boxes above. Sign and print your name. Then tear off this page and return it with the envelope to the AileyCamp staff. Keep the other pages for your records.

I have read this Consent and Authorization form. I have had the opportunity to ask, and I have received answers to, any questions I had about this study and the use and disclosure of information about me and my child for the study.

By my signature, I affirm that I am at least 18 years old, that I am my child's legal guardian, and that I have received a copy of this Consent and Authorization form.

Print Your Name

Print Your Child's Name

Your Signature

Date