

# The Efficacy of a Pilot Prevention Program for Children and Caregivers Coping with Economic Strain

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Published online: 7 August 2009  
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**Abstract** Poverty and economic stress are risk factors for child psychopathology; however, primary and secondary control coping can buffer children against the negative effects of these risks. A 4-week (12 h) pilot prevention program aimed at enhancing coping skills and preventing symptoms of psychopathology among children growing up in poverty was evaluated using a multiple baseline design. Participants were 24 children (ages 8–12) and their primary caregivers. Attrition was low and parent-reports of program satisfaction were high. Children’s ability to generate positive coping thoughts and high quality solutions to problems improved from pre- to post-intervention. At the post-intervention measurement, parents’ and children’s involuntary engagement stress responses had declined and parents’ secondary control coping had increased. Children’s internalizing and externalizing symptoms also decreased from pre- to post-intervention, according to parent-reports. Results provide preliminary evidence for the feasibility and efficacy of the intervention.

**Keywords** Prevention · Poverty · Economic stress · Coping · Children

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The research reported herein was based on the first author’s doctoral dissertation.

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## Introduction

Poverty creates stress with enormous negative consequences for child well-being. Poor children on average are at greater risk for developing internalizing and externalizing disorders (Conger et al. 2002; Garbarino 1998; Grant et al. 2003; Kim et al. 2003; McLoyd 1998). Chronic psychosocial stress is becoming recognized as the major mechanism through which poverty exerts its negative toll on psychological development. Poor children are hit with a double dose of poverty-related stress due to the direct effects of stress on their own functioning, as well as via its deleterious effects on their parents. Economic stress leads to depressed, irritable mood among parents, which can lead to less effective parenting, both of which contribute to child and adolescent problems such as anxiety, depression, and disruptive behavior problems (e.g., Conger et al. 1992, 1993; McLoyd 1990). However, certain coping skills have been shown to protect children against these stressors of poverty (Wadsworth and Compas 2002), suggesting that adaptive coping can promote resilience in the face of economic hardship. The current study adapts, implements, and evaluates a theory-based pilot prevention program aimed at enhancing coping skills and decreasing internalizing and externalizing symptoms for children growing up in poverty.

Prevention programs aim to prevent mental disorders by mitigating their causes or enhancing competence (Coie et al. 1993). Because many risk factors, including poverty, are difficult to eliminate, augmenting factors that foster resilience in the face of stress is an important prevention strategy. Research has identified characteristics of “resilient” children, including higher intelligence, easy temperament, and attendance at effective schools (Masten and Coatsworth 1998). However, many of these characteristics

represent factors that are difficult to manipulate and are therefore not feasible targets for prevention programs. On the other hand, coping (the ability to regulate emotions and behavior in the face of stress) can protect against the negative effects of stress and is more amenable to intervention (Compas et al. 2001).

Coping is a process of adaptation to stress that includes conscious attempts to manage emotions and cognitions, regulate behavior, control autonomic arousal, and act on the environment to alter or decrease the source of stress (Compas et al. 2001). According to the Responses to Stress framework (Connor-Smith et al. 2000), responses to stress can be distinguished along two broad dimensions: voluntary/involuntary and engagement/disengagement. Voluntary responses to stress are analogous to effortful coping while involuntary stress responses are automatic reactions. Both voluntary and involuntary responses are further distinguished along the dimensions of *engagement* versus *disengagement*. Engagement responses are oriented toward the stressor or one's reactions to the stressor, while disengagement responses are oriented away from the stressor or one's reactions. Voluntary engagement coping behaviors are further distinguished according to goals of *primary control* versus *secondary control*. Primary control responses are aimed directly at modifying the environment or one's emotional response, and secondary control coping responses are aimed at maximizing fit between the self and the environmental conditions. The current study focuses on improving primary control coping (e.g., problem solving, emotional regulation) and secondary control coping (e.g., cognitive restructuring, positive thinking) and reducing involuntary engagement responses (e.g., physiological arousal, intrusive thoughts) because of their links with child mental health as well as their relative malleability.

Primary and secondary control coping are associated with improved psychological adjustment in children and adolescents exposed to a variety of uncontrollable stressors (e.g., illness, family conflict). Thus, these coping strategies seem to be beneficial even when external events cannot be altered (Compas et al. 2001). In addition, primary and secondary control coping mediate the relation between poverty-related stress and psychological adjustment for adolescents (Wadsworth and Compas 2002), suggesting that these types of coping strategies may promote resilience in the face of economic hardship. Conversely, involuntary engagement responses are associated with increased internalizing and externalizing problems in adolescents coping with economic strain (Wadsworth et al. 2005).

Intervention programs may see enhanced efficacy by targeting poverty-related stress and directly teaching skills for how to cope with it. A number of intervention programs target the skills research shows to be effective for coping with poverty-related stress. Two such evidence-based

programs, Coping Cat (Kendall 2000) and Primary and Secondary Control Enhancement Training (PASCET; Weisz et al. 1997), provide evidence that more sophisticated coping skills are teachable and that learning coping skills translates into measurable reductions in psychological disorders and symptoms. Although few studies to date have included components explicitly aimed at reducing involuntary stress responses, relaxation training is a component of many prevention and treatment programs and has been shown to reduce physiological arousal and improve mood among children aged 9–12 (Lohaus and Klein-Hessling 2003). Coping efficacy, or the degree to which individuals believe in their ability to cope effectively with life stress, is a correlate of coping skills that is also associated with emotional well being in children (Cummings et al. 1994; Sandler et al. 2000). Coping skills training has the potential to enhance children's actual ability to cope with economic strain as well as their perceptions of efficacy.

The goal of this research was to conduct a pilot study of a strengths-based preventive intervention for low-income children and parents, aimed at enhancing child and parental coping skills and preventing children's symptoms of psychopathology. Because this was a first step in the development of this intervention, we followed guidelines set forth by the Institute of Medicine for the pre-trial stages of intervention development (Mrazek and Haggerty 1994). The recommended process includes using theory to identify the target population and intervention focus, the use of empirically-based and theory-consistent methods for targeting change, and careful piloting of the intervention prior to conducting a randomized controlled trial. As such, we chose a design that would allow us to study participant engagement and document behavior change, but opted not to use a randomized controlled trial design in this initial step.

The current study was designed to address some limitations of previous research. Specifically, while numerous prevention programs such as Head Start (e.g., Ripple and Zigler 2003), the Perry Preschool Program (Weikart and Schweinhart 1992), and Fast Track (Bierman et al. 2002), target at-risk children including children from impoverished families, none of these programs to date have been aimed specifically at assisting children in developing skills to cope with the stress of chronic economic hardship. Therefore, program components were designed to assist families to communicate about and cope with the daily stressors associated with living in poverty (e.g., Wadsworth et al. 2008). In addition, although some prevention programs include training in skills that are analogous to coping (e.g., Fast Track), few have targeted multiple strategies or utilized an explicit theory of coping as a basis for the intervention, and fewer have systematically examined changes in coping skills resulting from the intervention.

## Method

### Participants

#### *Recruitment*

Families who had previously participated in the Colorado Project on Economic Strain (CoPES), a longitudinal study of stress and coping among low-income families, who had a child between the ages of 8 and 12, and who had consented to be contacted regarding future studies were recruited. The CoPES sample was originally recruited via flyers distributed at various locations (i.e., Head Start centers, health clinics serving uninsured/under-insured families) and was considered representative of poor families in the Denver metro area in terms of ethnicity (65% ethnic minority) and monthly income ( $M = \$1,615$ ,  $SD = \$894$ ). For more information about the recruitment procedure and characteristics of the CoPES sample, see Wadsworth et al. (2008). Twenty-nine percent of eligible individuals from the CoPES sample (34.3% of those contacted) participated in the intervention ( $n = 12$ ). This rate of participation is similar to that found in other prevention programs (Gross 2001). The most frequently cited reasons for non-participation were related to logistical constraints (e.g., working multiple jobs, having transportation problems). There were no significant differences between individuals from the longitudinal project who participated in the current study and those who did not on income, maternal education, parental occupation status, coping, or children's symptoms.

To increase sample size, flyers advertising the project were again distributed at the local agencies that had been used to recruit participants for CoPES. From the sample of individuals that contacted the researcher for more information regarding the study after seeing an advertisement, 48% participated ( $n = 12$ ). As in the recruited group, the most frequently cited reasons for non-participation were related to logistical constraints.

#### *Participant Characteristics*

The final sample of participants consisted of 24 parent-child dyads<sup>1</sup> (54% of children were female, 96% of participating parents were female). The average caregiver age was 37 years ( $SD = 8$  years) and the average child age

<sup>1</sup> Analyses revealed the presence of differences between the sample recruited from CoPES and those recruited specifically for this study (e.g., ethnic composition, age of children, use of primary control coping, and internalizing symptoms). Including recruitment method as a covariate in analyses did not significantly change the results. To maximize our degrees of freedom with the small sample, the reported results combine the two samples and do not include recruitment method as a covariate.

was 10 years ( $SD = 1$  year). The ethnic breakdown of caregivers was: 41.7% Caucasian, 33.3% Latino, 16.7% African American, and 8.3% multiracial. The average annual household income was \$17,876 ( $SD = \$11,494$ ). In the year the majority of these data were collected (2005), the federal poverty threshold for a family of four was set at \$19,806 (US Census Bureau 2009), indicating that, on average, the families in this sample were below the federal poverty line. The mean parental occupational status on Hollingshead's 9-point employment scale was 3.8 (Hollingshead 1975), which corresponds roughly to a store clerk or prison guard. In terms of education, 8.7% had not completed high school, 56.5% had a high school diploma or GED, 17.3% had schooling beyond high school, and 17.4% were currently enrolled in school. The majority were receiving state or federal aid: 65% of children received free- or reduced-price lunch, 61% of children received Medicaid, 48% of families received food stamps, and 13% of families received TANF benefits. Finally, 71% of participating parents were single, divorced, separated, or widowed.

#### *Procedure*

Interested families attended a baseline session during which written consent and assent was obtained and questionnaires were completed. The workshop began approximately 1 month later. Six-four-week workshops were held, with an average of four dyads participating in each. Workshop sessions lasted 3 h and were held in the evenings. Families were paid \$60: \$10 upon completion of questionnaires at each timepoint and \$20 to defray transportation costs. Families with perfect attendance had a chance to win an additional \$100 raffle prize.

#### *Intervention: Families Coping with Economic Strain (FaCES) Program*

The Families Coping with Economic Strain (FaCES) program designed for this study was adapted with permission from the Primary and Secondary Control Enhancement Training (PASCET) treatment program for child depression (Weisz et al. 1997). The PASCET program is structured around a theoretical model of coping that closely parallels the primary and secondary control coping aspects of the Responses to Stress Model (Connor-Smith et al. 2000) and explicitly teaches primary and secondary control coping and relaxation skills (Weisz et al. 1997). The child portion of FaCES was parallel to the PASCET program with several modifications and additions. Most importantly, because there are no known programs geared towards helping families constructively discuss and cope with issues specific to financial stress, additional components

were designed based on research by Wadsworth and colleagues (e.g., Wadsworth et al. 2005; Wadsworth and Santiago 2008) to address these issues. Focus groups confirmed that parents were receptive to this content and that it was presented sensitively.

Four other important modifications were made to the PASCET program prior to its use in the current intervention. First, the program was adapted for use in a prevention-oriented group setting rather than as an individual treatment. This included covering the PASCET psycho-educational material in four longer sessions rather than ten shorter individual sessions. Second, because PASCET is designed primarily for use with children, material covered in the child sessions was summarized for review with parents. Third, two of the parent sessions focused on parental coping and parenting skills. The material for these sessions was primarily adapted from two programs: *New Beginnings* (Weiss and Wolchik 1998) and *The Incredible Years* (Webster-Stratton and Hancock 1998). Material on parental coping was also based on the *Responses to Stress Model* (e.g., Connor-Smith et al. 2000) and research by Wadsworth et al. (2005). Finally, additional activities in both the parent and child sessions were designed to increase the focus on anxiety and externalizing symptoms. For example, the intervention included an explicit focus on physiological reactions to stress and relaxation exercises to reduce these anxiety responses. Parents and children were also taught assertive communication skills as alternatives to overly passive or overly aggressive responses to interpersonal problems and anger.

The resulting intervention, the FaCES Program (Raviv and Wadsworth 2003), consisted of four 3-h sessions for children between the ages of eight and twelve and their primary caregiver. The manual is available from the first author upon request. Parent and child groups were held separately and each facilitated by two female doctoral students in child clinical psychology. In total, four different leaders led the child group and eight different leaders led the parent group over the course of the six workshop cycles. The ethnicity of the group leaders was: 58% Caucasian, 17% Asian/Pacific Islander, 8% Latino, 8% African American, and 8% multiracial. All leaders had undergone 6 h of training on the theoretical basis of the program, roles and responsibilities, group processes, and implementation of the manualized intervention. Training also emphasized sensitivity to cultural and socioeconomic differences. Group leaders also attended weekly group supervision meetings with the second author, and co-leaders met weekly to debrief, problem-solve, and plan the upcoming session.

Several steps were taken to reduce barriers to participation. First, child-care was provided for families who had children who were too young to participate in the intervention. Second, a free dinner was provided for participants

to eliminate meal preparation time and cost. Third, sessions were scheduled in the evenings, after work hours.

### *Child Intervention*

The goal of the children's intervention was to increase knowledge and use of adaptive coping skills, particularly in the face of financial stress. Children were taught primary control coping skills (i.e., problem solving, emotional expression, and emotion regulation), secondary control coping skills (i.e., positive thinking, cognitive restructuring, and distraction), and three relaxation techniques (guided imagery, diaphragmatic breathing, and progressive muscle relaxation). The PASCET program makes use of acronyms to help children remember the primary and secondary control coping skills. For example, to help children remember the steps of problem solving, the STEPS acronym is utilized: Say what the problem is, Think of solutions, Examine each one, Pick one and try it out, and See if it worked. Similarly, the THINK acronym was utilized to cover secondary control coping strategies: Think positive, Help from a friend, Identify the silver lining, No replaying bad thoughts, and Keep thinking—don't give up! Adjustments were made to PASCET to ensure that the intervention addressed the specific stressors experienced by children in poverty (e.g., Wadsworth et al. 2008). Segments aimed at helping children identify and communicate about financial stressors and the emotions that accompany these strains and video clips depicting children coping with financial strain were added to the PASCET program. The application of the coping strategies covered in the PASCET program to economic stressors was emphasized throughout the program, although other psychosocial stressors typical for this age group (e.g., being teased, sibling conflict) were also addressed. Approximately 50% of the discussions and activities were focused specifically on the stressors accompanying family financial hardship. The sessions utilized varied activities (e.g., games, video clips, role-playing) to illustrate key concepts and maintain engagement.

### *Parent Intervention*

The parent intervention was designed around four goals: (1) to provide parents with additional strategies for effective communication with children about financial stress, (2) to teach parents the skills their children were learning, so that they could serve as "coaches" for their children in everyday situations, (3) to teach parents effective strategies for coping with their own stress, and (4) to briefly review basic parenting skills. Collaboration between parents and program leaders was emphasized and parental participation was encouraged. At the end of each session, parents and children participated in activities designed to enhance

positive affect and provide the opportunity to practice new skills. For example, in one activity, parents and children brainstorm fun, low-cost/free activities in which they could engage together to keep their mind off of something stressful. Each dyad shared their list with the group, and then picked a fun activity and scheduled a time for it.

### Measures

Data were collected for the present study at four time points, spaced 4 weeks apart. To avoid overlapping reports, participants were instructed to answer questions in relation to the past 4 weeks. Dyads completed pen-and-paper questionnaires in person at a baseline session, 4 weeks prior to the initiation of the intervention (T1), at a pre-intervention session (T2), and at a post-intervention session (T3). Questionnaires were mailed to dyads 4 weeks after the conclusion of the intervention (T4). All parent-report measures were completed at all four timepoints. However, because children required the assistance of a research assistant to complete the majority of questionnaires, child-reported data is only available from the first three timepoints unless otherwise noted.

### Demographic Information

Parents completed the Demographic Questionnaire assessing age, gender, and ethnicity, family monthly income, parent employment, and sources of federal or state assistance at the baseline visit.

### Economic Strain

Parents completed the 11-item *Economic Hardship Questionnaire* (EHQ; Lempers et al. 1989). Items assess the occurrence (yes/no) of changes in the family's style of living (i.e., cutting back on expenses) and are summed. The average reliability for this scale across the four timepoints was  $\alpha = .86$ .

Initial questions on the *Responses to Stress Questionnaire* (described below) asked parents to report on the recent occurrence (yes/no) of 9 economic stressors in their child's life (i.e., having to go without a meal because of finances) and 7 economic stressors in their own lives (i.e., not being able to pay all the bills). Scores were created by adding the number of items that occurred.

Children's perceptions of economic strain were assessed using the *Children's Economic Strain Questionnaire* (CESQ). The CESQ was developed for this study and consists of 5 items assessing how often the child worries that the family will not have enough money to pay for important things, such as food or desired toys. Children responded using a 5-point thermometer (visual-analog)

scale (0 = never, 4 = almost all the time). The CESQ score is a mean of the items. The average internal consistency across the three timepoints was  $\alpha = .80$ . Correlations between T1 and T2 scores showed moderate test-retest reliability ( $r = .66, P < .01$ ).

### Life Stress

Parents completed a modified version of the *Multicultural Events Schedule for Adolescents* (MESA; Gonzales et al. 2001) regarding the occurrence of stressors in their child's life. Five subscales (51 items) were used in the current study: Family Conflict, Family Trouble/Change, Peer Hassles/Conflict, School Hassles, and Economic Stress. The MESA was developed and validated using an ethnically diverse, low-income population. The average reliability of this scale across the timepoints was  $\alpha = .75$ .

### Coping Use

Parents completed the *Responses to Stress Questionnaire* (RSQ; Connor-Smith et al. 2000) regarding both their own coping and their children's coping at all timepoints. The RSQ is a 57-item measure, consisting of five factors with well established psychometric properties (Connor-Smith et al. 2000). As recommended by the authors, proportion scores were calculated by dividing the total score for each factor by the total score to control for base rate differences in endorsement. The factors used in the current study were Primary Control, Secondary Control, and Involuntary Engagement. Internal consistencies at T1 for parents and parent-reports of child respectively were:  $\alpha$  (Primary Control) = .74/.76,  $\alpha$  (Secondary Control) = .65/.86, and  $\alpha$  (Involuntary Engagement) = .94/.93.

### Coping Skill Acquisition

Children completed the *Coping Skills Scale* (CSS) designed for this study to assess children's acquisition of the primary and secondary control coping skills. The first part of the measure assesses acquisition of primary control (problem solving) skills. The child is asked to generate solutions and specify the problem solving steps s/he used in response to a financial stressor described in vignette. The second part of the measure assesses secondary control coping (positive thinking and cognitive restructuring). The child is asked to generate alternative coping thoughts in response to a vignette in which a friend is described as having negative thoughts (e.g., self blame, imagining the worst) in response to a financial stressor.

Two coders, blind to time point, coded the child's responses. The first primary control category was solution quantity, or the number of generated solutions that

represented actions or changes in behavior (inter-rater percent agreement = 87%). The second dimension was solution quality, in which each generated solution was coded for quality on a scale of one to five. Higher quality scores were assigned as the proposed solutions improved along four dimensions: feasibility, potential benefit, specificity, and pragmatism (inter-rater percent agreement = 76%). Solution quantity and quality were combined to create a total solution score by adding up the number of solutions receiving a quality score of 4 or 5 plus the total number of solutions generated. The third part of the primary control coping assessment was participants' ability to remember and describe the problem solving steps taught during the intervention, based on the STEPS acronym. To score secondary control coping, the number of positive coping thoughts was summed. A thought was counted if it was an example of positive thinking (e.g., trying to see the "bright side") or cognitive restructuring (e.g., thinking about things they're learning from the situation or telling themselves something good will come from the situation). Inter-rater percent agreement for coding secondary control positive coping thoughts was 78%.

Test-retest reliability was assessed by correlating T1 and T2 scores. There was a moderate level of stability in the solution scores ( $r = .59, P < .01$ ); however, the T1-T2 positive coping thoughts correlation was non-significant. Validity of the CSS was established by examining correlations between CSS subscales and parent-reports of primary and secondary control coping and parent- and child-reported symptoms. Positive coping thoughts was significantly related to primary and secondary control coping ( $r = .38, P < .05$ , and  $r = .39, P < .05$ , respectively) and the solution score was related to fewer internalizing symptoms ( $r = -.40, P < .05$ ). The remaining correlations did not reach significance; however, four out of seven were higher than .20 in the expected direction.

#### Coping Efficacy

Children completed the 7-item *Coping Efficacy Questionnaire* (CEQ; Sandler et al. 2000) at all timepoints. The CEQ assesses children's satisfaction with handling past problems and anticipated effectiveness in handling future problems. Reliability averaged .76 across the four timepoints.

#### Children's Symptoms of Psychopathology

Parents completed the *Child Behavior Checklist* (CBCL; Achenbach and Rescorla 2001). The CBCL consists of 118 items that describe behavioral and emotional problems, rated on a scale of zero to two. The CBCL yields scores for Internalizing and Externalizing Problems. Excellent

reliability and validity have been established for the CBCL (Achenbach and Rescorla 2001).

Children completed the 37-item *Revised Children's Manifest Anxiety Scale* (RCMAS; Reynolds and Richmond 1985) to assess their symptoms of anxiety (reliability averaged  $\alpha = .90$ ). Children also completed the 30-item *Reynolds Child Depression Scale* (RCDS; Reynolds 1989). The reliability in the current study averaged  $\alpha = .91$ . Given the high rates of concordance between children's reports of anxiety and depression ( $r = .83, P < .01$  at baseline), these scores were standardized and averaged to create a composite child-reported anxiety/depression score.

#### Satisfaction

Parents completed a *Program Evaluation Questionnaire* designed for this study at T3. Parents rated overall satisfaction, satisfaction with program content, and satisfaction with program staff on 5-point Likert scales (1 = very dissatisfied, 5 = very satisfied). They also provided suggestions for improvement as well as positive comments regarding the program.

#### Fidelity and Implementation Quality

Implementation quality was assessed utilizing self- and observer-reports on the *Post-Session Evaluation Form* (PSEF). Staff completed the PSEF following each workshop session. In addition, an independent observer attended a randomly selected parent session and two randomly selected child sessions of each workshop cycle and completed a PSEF for each of these sessions. The PSEF assessed the degree to which targeted concepts and skills had been covered in the session, with each activity rated on a 5-point Likert scale (1 = not covered, 5 = thoroughly covered). Each session had a separate evaluation form tailored to the specific content of the session, for a total of four forms (PSEF 1, 2, 3, and 4). Sample items included, "The concept that economic stressors can trigger negative feelings" (PSEF 1), and, "Generating lists of potential activities in which the child can engage to stop him/herself from ruminating about distressing thoughts" (PSEF 3). Session fidelity was calculated by averaging all the scores on all items contained in that session's PSEF. Overall fidelity was calculated by averaging all items across all four forms. Thus, both session fidelity and overall fidelity scores ranged from 1 to 5.

#### Research Design and Analysis Plan

First, factors related to implementation, such as fidelity, participation and attrition, and participant satisfaction were analyzed. Second, preliminary analyses were undertaken to

examine the characteristics of the dataset and associations among variables. Third, a small-n, within-subjects repeated-measures design was used with the beginning baseline, pre-intervention, post-intervention, and one-month follow-up data to examine the effects of the intervention. The two pre-intervention data points were utilized to establish changes that occurred in the absence of an intervention so that they could be compared to the changes that occurred during and after the intervention. Although there was no comparison group, the multiple baselines helped demonstrate causal relations, ruling out threats to internal validity (Kazdin 1998; Reichardt and Mark 1993). After the four-week intervention, post-intervention data were obtained and participants ceased receiving the intervention. Thus, the design followed an AABA format.

## Results

### Analyses Related to Implementation

#### *Fidelity*

Average leader-reported overall fidelity score across the four child sessions, across workshop cycles, was 4.58 ( $SD = .35$ ) on a five-point scale, while the average observer-reported overall fidelity score was 4.29 ( $SD = .29$ ). The average leader-reported overall fidelity score across the four parent sessions, across workshop cycles, was 4.67 ( $SD = .35$ ), while the average overall fidelity score according to observer-report was 4.27 ( $SD = .37$ ). These scores indicated that the material was generally “mostly” to “thoroughly” covered. There were no significant differences in fidelity to the manual among the four child sessions or among the four parent sessions, indicating that fidelity was equally high across all sessions. There were also no significant differences between workshop cycles in leaders’ fidelity to the manual in either the child or parent groups, indicating that fidelity to the manual was consistent across the different leaders and different group compositions. Although observer-reported fidelity was high, it tended to be slightly lower than leader-reported fidelity. These reporter differences in session fidelity were significant for two child sessions (1 and 4) and two parent sessions (1 and 3).

#### *Participation and Attrition*

Participation rates were high, with 88% of dyads attending all four sessions. Three dyads missed one session due to illness, scheduling conflicts, or transportation problems. Attrition from the workshop was extremely minimal ( $n = 1$ ); however, attrition between the baseline data collection point and the beginning of the intervention was a

more significant problem. Twenty-two percent of the dyads who completed the baseline data collection point did not subsequently attend any workshop session. Reasons included changes in work/school schedules, transportation difficulties, and other life stressors. There were no significant differences in background characteristics or coping/mental health variables between dyads who participated in the program ( $n = 24$ ) and dyads who did not ( $n = 7$ ).

#### *Satisfaction*

Parents indicated high levels of satisfaction with the program ( $M = 4.6$ ,  $SD = .58$ ). Average scores for satisfaction with program content and program staff were also high ( $M = 4.5$ ,  $SD = .78$  and  $M = 4.8$ ,  $SD = .42$ , respectively). Parents’ qualitative feedback included both positive comments (that content was “educational” and “useful,” that staff were “positive” and “non-judgmental,” and that group dynamics were positive) and negative comments (primarily regarding logistics including distance and traffic and shortness of the program).

#### Baseline Descriptive Statistics

The means and standard deviations of children’s stress, coping, and symptom at T1 are presented in Table 1. Scores indicated that children in this sample had recently experienced approximately two finance-related stressors based on parent-report. On average, they reported worrying sometimes-to-often about financial issues. The most common responses to financial stress were secondary control coping and involuntary engagement. Consistent with the preventive nature of this intervention, average scores on psychological measures were within the normal range.

Parent self-reports on stress and coping were also obtained. Parents reported experiencing an average of 3.43 recent stressful financial events ( $SD = 1.75$ ). Similarly, the average score on the EHQ was 2.60 ( $SD = .66$ ). Parent-reports of their own coping indicated that they too utilized secondary control coping most often in response to financial stressors. The second most common type of response was involuntary engagement.

#### Associations Among Variables at Baseline

Table 1 contains the Time 1 correlations between child- and parent-reports of stress, coping, and mental health symptoms. Children’s reports of economic strain were positively related to their self-reported symptoms of anxiety/depression, and their perceptions of their coping efficacy were negatively related to self-reported anxiety/depression. On the whole, correlations among the parent-reported variables were also consistent with hypotheses.

**Table 1** Children's economic stress, responses to stress, and psychological symptoms at T1: correlations and descriptive statistics

Variables	1	2	3	4	5	6	7	8	9	10
<i>M</i>	1.9	7.43	1.38	.20	.27	.16	3.09	56.04	54.48	-.0021
<i>SD</i>	1.38	4.85	.92	.04	.05	.03	.41	11.40	11.16	.89
1. RSQ child economic stress	–									
2. MESA	.71**	–								
3. CESQ	.33	.12	–							
4. RSQ primary control	-.48*	-.46*	.00	–						
5. RSQ secondary control	-.51**	-.36 <sup>†</sup>	-.13	.66**	–					
6. RSQ invol. engagement	.44*	.42*	.04	-.87**	-.80**	–				
7. Coping efficacy	-.29	-.31	-.40*	.20	.23	-.23	–			
8. CBCL internalizing	.27	.33	-.32	-.74**	-.66**	.76**	-.08	–		
9. CBCL Externalizing	.16	.22	-.30	-.67**	-.57**	.75**	-.12	.90**	–	
10. Composite child-report anxiety/depression	.23	.05	.70**	.01	-.25	.10	-.37 <sup>†</sup>	-.18	-.09	–

For ease of interpretation, the means reported for the CBCL scales are *T*-scores, although raw scores were used for the correlations

*RSQ* responses to stress questionnaire, *MESA* multicultural events schedule for adolescents, *CESQ* children's economic strain questionnaire, *CBCL* child behavior checklist

<sup>†</sup>  $P < .10$ ; \*  $P < .05$ ; \*\*  $P < .01$

Several of the obtained correlations in this small sample were quite high. This was particularly true for correlations between subscales on the same measure (e.g., correlations among RSQ factors and CBCL Internalizing and Externalizing). The pattern of correlations among these variables is consistent with other studies (e.g., Wadsworth and Compas 2002), although the magnitude of the correlations is likely to be attenuated within a larger sample.

#### Intervention-related Changes in Responses to Stress and Mental Health Symptoms

The following sets of analyses examined changes in the hypothesized mediators (child and parent responses to stress, coping efficacy) and outcomes (children's mental health symptoms) over the course of the intervention as well as during the follow-up phase. All analyses described below utilized GLM repeated measures analysis of variance (ANOVA) to examine changes between the baseline measurements (T1 to T2) and over the course of the intervention (T2 to T3). Follow-up data were available for all parent-reported variables and child-reported coping efficacy. For these variables, repeated measures ANOVA was also utilized to examine changes between the end of the intervention and follow-up (T3 to T4). Means are presented in Table 2.

#### Coping Skill Acquisition

To assess children's acquisition of the targeted primary and secondary control coping skills, pre-intervention scores on

the CSS were compared to post-intervention scores. Results revealed a trend towards improvement in children's ability to generate high quality solutions to problems [ $F(23, 1) = 3.88, P = .06$ ; Cohen's  $d = .51$ ]. Not surprisingly, none of the children were able to list the problem solving steps prior to the intervention. However, at T3, the majority of the children (71%) were able to remember all five of the problem solving steps that were taught during the intervention, and an additional 13% were able to remember three or four of the five problem solving steps. Improvements were also noted in the number of coping thoughts generated by children. These increased significantly from T2 to T3 [ $F(23, 1) = 11.80, P = .002$ ; Cohen's  $d = .72$ ]. Because the CSS was administered three times, it was possible that these improvements represented practice or maturation effects. To examine this possibility, T1 and T2 scores (which both preceded the intervention) were compared. There were no significant differences between these two scores on any of the scales.

#### Coping Skill Use

To assess whether the intervention increased the primary and secondary control coping skills used by children and decreased their involuntary engagement responses, pre-intervention scores on the RSQ were compared to post-intervention scores. Parent-reports of children's involuntary engagement responses decreased significantly over the course of the intervention [ $F(23, 1) = 4.33, P = .05$ ; Cohen's  $d = .25$ ]. There were no significant differences in parent-reports of children's primary or secondary control

**Table 2** Means and standard deviations of children's responses to stress, parents' responses to stress, and children's symptoms at each FaCES time point

Variables	FaCES T1		FaCES T2		FaCES T3		FaCES T4	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
CSS problem solving <sup>a</sup>	4.42	2.57	4.46	2.62	5.88	2.92	–	–
CSS coping thoughts <sup>a</sup>	1.50	1.14	2.08	1.35	3.04	1.33	–	–
Coping efficacy <sup>a</sup>	3.09	.41	2.98	.48	3.19	.60	3.15	.49
Parent-report of child primary control	.198	.038	.196	.040	.207	.035	.206	.035
Parent-report of child secondary control	.272	.052	.266	.055	.272	.043	.277	.049
Parent-report of child involuntary engagement <sup>a</sup>	.215	.040	.223	.033	.215	.031	.212	.039
Parent self-reported primary control	.194	.034	.197	.032	.199	.038	.203	.040
Parent self-reported secondary control <sup>a</sup>	.250	.038	.253	.047	.270	.047	.259	.060
Parent self-reported involuntary engagement <sup>a</sup>	.240	.035	.240	.031	.225	.037	.231	.040
Composite of child-reported anxiety/depression <sup>b</sup>	-.002	.894	.100	1.070	-.098	.911	–	–
CBCL internalizing <sup>a</sup>	9.70	8.04	10.04	7.62	6.79	6.69	6.67	6.11
CBCL externalizing <sup>a</sup>	10.22	10.74	9.83	9.77	7.42	7.20	7.33	7.84

<sup>a</sup> Significant T2-T3 change

<sup>b</sup> Trend T2-T3 change

coping from T2 to T3. There were no significant differences on any of these factors between the two baselines (T1 and T2) or from post-intervention to follow-up (T3 to T4).

#### Coping Efficacy

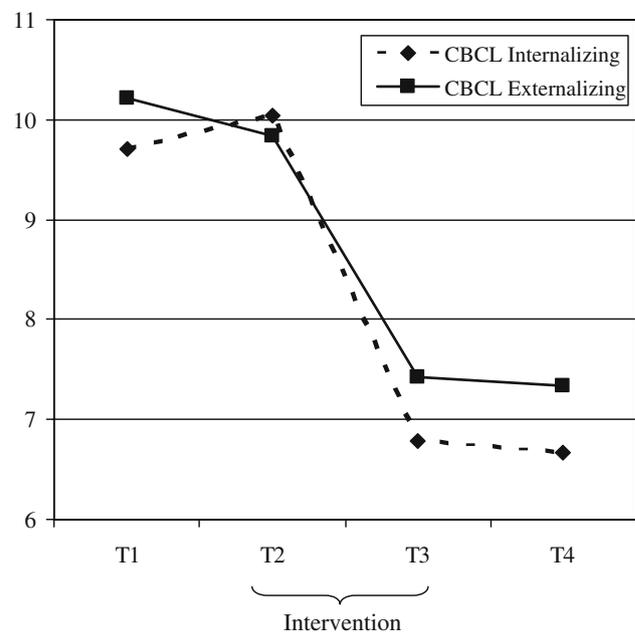
Results indicated that children's perceptions of their coping efficacy improved over the course of the intervention, although this trend did not reach significance [ $F(23, 1) = 3.08, P = .09$ ; Cohen's  $d = .39$ ]. Levels of coping efficacy were stable between post-intervention and follow-up, with nearly identical means at T3 and T4. These results should be interpreted with caution. Although the difference in coping efficacy between the two baseline measurements was not significant, the means show that children's reports of coping efficacy decreased over this time, and then increased over the course of the intervention.

#### Parental Responses to Stress

Results indicate that parents improved significantly in their self-reported use of secondary control coping [ $F(23, 1) = 7.18, P = .01$ ] over the course of the intervention (Cohen's  $d = .38$ ). In addition, their self-reports of involuntary engagement responses decreased significantly [ $F(23, 1) = 6.80, P = .02$ ] over this 4-week period (Cohen's  $d = .44$ ). No significant changes were detected in secondary control coping and involuntary engagement between T1 and T2 or between T3 and T4. There were no significant differences in primary control coping at any of the time intervals.

#### Child-Reported Symptoms

There was a trend toward a reduction in anxiety/depression from T2 to T3 [ $F(23, 1) = 3.62, P = .07$ ; Cohen's  $d = .24$ ]. There were no significant changes in child-reports of anxiety/depression over the 4-week baseline period.



**Fig. 1** Parent-reports of children's internalizing and externalizing symptoms over the course of the FaCES project

### Parent-Reported Symptoms

Parents reported on their children's internalizing and externalizing symptoms (see Fig. 1). There were significant decreases in internalizing [ $F(23, 1) = 10.26, P = .004$ ; Cohen's  $d = .45$ ] and externalizing symptoms [ $F(23, 1) = 5.36, P = .03$ ; Cohen's  $d = .28$ ] over the course of the intervention. These decreases appear to have been maintained at follow up, with no significant changes in internalizing or externalizing symptoms from T3 to T4. As expected, there were no significant changes in internalizing or externalizing symptoms for the overall sample between the two baseline measurements.

### Discussion

This research represents the first evaluation of the feasibility and efficacy of the FaCES prevention program. The initial treatment development and pilot efficacy trial yielded promising results, supporting further use and investigation of the program. Evaluations of fidelity and participation provide support for the feasibility of implementation, and satisfaction ratings confirm its acceptability to a diverse low-income sample. Most importantly, there were no adverse events that occurred, and results indicate that there were no unintended negative consequences of the intervention. Efficacy of the program was supported by improvements in many of the proximal coping variables targeted by the intervention for their potential to reduce risk for psychopathological symptoms. Findings also revealed a decrease in parent-reported internalizing and externalizing symptoms.

One of the strengths of this pilot study was its attention to design and implementation. The program manual was adapted from several existing empirically supported programs. The components that were added, such as parent-child communication about economic strain, were based on theory, piloted in focus groups, and supported by empirical research. Finally, program leaders with experience and training in child clinical psychology were selected, and all program leaders underwent extensive training and ongoing supervision.

Regardless of its quality, no prevention program will prove efficacious if appropriate participants are not recruited and retained. As is the case with many prevention projects, recruitment for this project required extensive effort and participation rates were relatively low, and this may impact the generalizability of these findings to the general population of low-income families. Despite expressed interest in the program, many families were unable to participate due to competing demands on their time and difficulties with transportation. In addition, this

sample is highly mobile: 27% of previous participants had either moved to distant areas of the state or country or could not be located. This created difficulties in tracking and recruiting previous participants. Families targeted for prevention by definition have children with relatively low levels of symptom severity and are thus typically experiencing less subjective distress. This can limit motivation to devote time and effort to participating in services for their children in the face of other pressing obligations.

Despite these obstacles, the project recruited and retained an ethnically diverse, low-income sample. Satisfaction ratings were consistently high across participants. In addition, nearly all dyads had perfect attendance and only one dyad dropped out of the study once the intervention had begun. On the other hand, attrition between the baseline measurement and the first workshop session was more problematic. Reasons given for subsequent nonparticipation were generally logistical, reflecting the instability and high stress levels of this sample. Although this attrition necessitated the investment of additional recruitment efforts, the lack of significant differences between those that dropped out after the baseline session and those who did not indicates that attrition was not systematic, improving the generalizability of the findings.

Preliminary results also indicate that the manual created for the present study was successfully implemented. Fidelity reports show that all leaders were able to cover the material and differences in group composition did not strongly affect the coverage of the content. The amount and complexity of material contained in the manual was appropriate, the length of the sessions was sufficient to cover the allotted material, and no significant disruptions occurred that interfered with communication of program content. Thus, poor implementation can be ruled out as a potential explanation for failure to establish hypothesized improvements on some variables.

Another strength of the current study is its strong theoretical grounding. Previous research indicated that children are aware of and affected by economic strain and that stress and coping are related to their symptomatology (Wadsworth and Compas 2002). This theoretical model was reconfirmed in the current study. Baseline measures showed that higher levels of parent-reported life stress and economic strain were associated with lower levels of primary and secondary control coping use and more involuntary engagement responses. Child-reported economic strain was also significantly associated with more child-reported symptoms of anxiety/depression. Cross-informant correlations among these domains were generally in the right direction, but of insufficient magnitude to reach significance in the current sample. Beyond the correlations, the changes in children's coping and corresponding changes in internalizing and externalizing symptoms suggest that, consist

with the theoretical model, improvements in coping will be associated with reductions in symptomatology.

Parents reported improvements in their secondary control coping and decreases in involuntary engagement responses. The primary reason for targeting parental coping was to help parents serve as models for effective coping and stress management for their children (Kliewer et al. 1996). Although not directly measured in this study, it is reasonable to assume that these improvements in coping will help parents manage their own stress and may even help protect them from developing symptoms of psychopathology or reduce symptoms that they are already experiencing. Parental economic strain has a powerful indirect influence on children's psychological functioning via its deleterious effects on parental functioning (Conger et al. 1994). Therefore, intervening to improve parental responses to stress may also help children indirectly by improving parental mental health. Observing this chain of effects necessitates longer-term follow-up.

Based on theoretical and empirical evidence supporting the pivotal role of responses to stress in the face of poverty and financial stress, the current study sought to improve children's coping and coping efficacy and reduce their involuntary responses to stress. It is promising that children acquired the secondary control coping skills they were taught during the FaCES program. They were able to generate more positive coping thoughts in response to a hypothetical stressor after participating in the program than they were previously, and although their ability to generate high quality solutions to a hypothetical problem did not increase significantly, a change in the hypothesized direction was detected at the trend level. In addition, children's coping efficacy showed a trend towards improvement, indicating that children may have become more confident in their ability to effectively manage stressful occurrences or their emotional reactions to stress.

As hypothesized, parents reported significant decreases in their children's involuntary engagement responses over the course of the intervention; however, parent-reports of children's use of primary and secondary control coping did not change significantly over the course of the intervention. There are several potential explanations for the lack of improvement in use of primary and secondary control coping despite the improvement in acquisition of related abilities. First, it is possible that concept acquisition was not yet translated into coping skill use. Implementation of coping skills under conditions of stress is more difficult than generating coping strategies in hypothetical situations that do not engender an emotional response. This is particularly true for secondary control coping strategies that are just beginning to develop at these ages (Compas et al. 2001). Children at these ages are able to learn the concepts of secondary control coping but may be too young to

effectively implement them in vivo without support and practice. A second possibility is that children increased their use of primary and secondary control coping, but parents were not yet noticing these small changes. Coping is not always observable and small changes may be hard to detect over a short period of time. Finally, the coping measure utilizes broad response categories (e.g., not at all, a little, some, and a lot) that may not be sensitive to small changes.

Results regarding improvements in children's symptoms of psychopathology are also encouraging. Internalizing and externalizing symptoms decreased significantly over the course of the intervention, and there was a trend toward reduction in children's self-reported anxiety/depression. The multiple baseline design suggests a causal link between the intervention and improvements in coping and symptoms; however, other existing alternative explanations must also be considered. Participants in the study could not be "blind" as they knew that they were the recipients of an intervention. In addition, the majority of the data collected was based on self-reports. Therefore, it is possible that the results are inflated due to demand characteristics. This limitation is ubiquitous in prevention and treatment research. One way to overcome this obstacle is by limiting dependence on self-reports for establishing program effects. For example, the largest effects obtained were on the CSS, a performance-based measure that is less likely to be affected by demand characteristics. Despite attempts to minimize demand characteristics, they were not completely eliminated and results should be interpreted accordingly.

The majority of the findings of this study represent small-to-medium effects. However, we believe that despite relatively modest effect sizes, the findings reported herein are clinically meaningful. Specifically, given the public health significance of mental health problems among children, even small reductions in symptoms have the potential to have far-reaching implications for children's development. In addition, this intervention was a prevention program. As such, the majority of participants were functioning within the normal range and substantial improvements in coping and reductions in symptoms were thus not expected. Rather, the intervention was undertaken as an attempt to support healthy functioning and enhance protective factors.

This pilot study has several limitations that should be taken into consideration. The primary limitation was the small sample size, which restricts the generalizability of the findings, limits power to detect small effects, and precludes subgroup analyses examining whether characteristics of the participants, such as gender, age, ethnicity, or initial levels of stress influenced their response to the intervention. The small sample also did not allow for the measurement of factors that accounted for changes in

children's symptoms of psychopathology. Thus, although improvements in children's coping and responses to stress are hypothesized to reduce and prevent symptoms of psychopathology, the documented changes in symptoms could result from a third variable that drove change in both coping and symptoms, such as social support gained by participation in a group intervention or the effects of attention and empathy from trained professionals. All results, especially those that were only found at the trend level, require replication with a larger sample.

Second, the current study did not utilize a comparison control group. Although the collection of multiple baseline data points helped rule out some alternative explanations for intervention-related changes in the current study, a randomized control group design is the gold standard for establishing program efficacy. The multiple baseline design is insufficient for establishing causality, because some alternative explanations, such as having a positive expectancy for change as a result of intervention participation, cannot be ruled out. We believe that the findings from this intervention development pilot project regarding feasibility, participant satisfaction, and positive change in the targets of the intervention are sufficiently promising that testing FaCES in a randomized controlled trial is now indicated.

Third, although participation rates in this project are in line with those obtained by other prevention projects, they are still low. This introduces selection biases, prevents many families from receiving the benefits of the program, and limits the generalizability of the findings. A fourth limitation is that this study examines the relations among multiple variables, thus increasing the possibility of Type I errors. In addition, some of the findings that were reported were trends that did not reach significance. While applying stringent Type I error controls in pilot studies reduces the likelihood of falsely rejecting the null hypothesis, it may also result in overlooking potentially important findings, thus preventing further development and evaluation of potentially promising interventions. Therefore, conventional significance levels were used for interpretation of the results of this study. With this in mind, caution should be exercised in interpreting results. More weight should be given to patterns of results that exist across multiple measures (e.g., children's self-reported anxiety/depression and parent-reports of children's internalizing symptoms) than to changes on a single measure in isolation.

Finally, long-term follow-up is needed to assess whether gains are maintained over time, especially since the chronicity of poverty-related stressors can easily nullify short-term changes. Equally important is the possibility that some prevention effects are not immediately manifested.

Despite these limitations, the results of this pilot study lay the foundation for future research on the FaCES program by establishing feasibility and promise. It also

suggests several directions for ongoing development and evaluation of FaCES. For example, follow-up studies could attempt to increase participation by conducting workshops at more conveniently located schools or community centers. In addition, the influence of demographic factors on response to the intervention should be examined to ensure its cultural sensitivity and the applicability of the content of the program across diverse groups. Finally, future studies utilizing larger samples, a randomized controlled design, and long-term follow-up would provide important additional information regarding the efficacy of the FaCES program.

**Acknowledgments** This research was supported by Ruth Kirchstein National Research Service Award F31 MH073344 from the National Institute of Mental Health awarded to the first author. The authors gratefully acknowledge the consultation and contributions of John Weisz, Ph.D. to the development of the FaCES intervention. We also thank Heather Taussig, Ph.D., Sara Culhane, Ph.D., and Edward Garrido, Ph.D. for their careful review and editing of this manuscript.

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