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Family Environment, Coping, and Mental Health in Adolescents Attending Therapeutic Day Schools

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Abstract

OBJECTIVE—This study examined associations among family environment, coping, and emotional and conduct problems in adolescents attending therapeutic day schools due to mental health problems.

METHODS—Adolescents (N=417; 30.2% female) ages 13–20 (M=15.25) reported on their family environment (affective involvement and functioning), coping (emotion-focused support-seeking, cognitive restructuring, avoidant actions), and emotional and conduct problems.

RESULTS—Poorer family environment was associated with less emotion-focused support-seeking and cognitive restructuring, and more emotional and conduct problems. Emotional problems were negatively associated with cognitive restructuring, and conduct problems were negatively associated with all coping strategies. Cognitive restructuring accounted for the relationship between family environment and emotional problems. Cognitive restructuring and emotion-focused support-seeking each partially accounted for the relationship between family functioning and conduct problems, but not the relationship between family affective involvement and conduct problems.

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CONCLUSIONS—Findings implicate the role of coping in the relationship between family environment and adolescent mental health.

Keywords

adolescent; family; coping; mental health; therapeutic school

The quality of family relationships plays a key role in adolescents' emotional and behavioral development (Repetti, Taylor & Seeman, 2002). A positive family environment (e.g., open communication, low conflict, high support, and moderate affective involvement) can support youths' healthy adjustment (Grant et al., 2006, Conger & Conger, 2002). Similarly, the ability to cope effectively with stress predicts positive adjustment (Sontag & Graber, 2010), and engagement coping strategies such as cognitive restructuring consistently predict positive youth mental health outcomes (e.g., Seiffge-Krenke & Klessinger, 2000). However, little research has examined the relationships among family environment, coping, and mental health in youth, and little is known about how adolescents' own coping responses may explain extant relations between family processes and adolescent mental health outcomes. Understanding the role of adolescents' own coping in the family pathway to youth mental health may ultimately suggest directions for family-focused interventions for youth with mental health problems. The current study is one of the first to evaluate the role of coping in the link between family environment and mental health problems in a population with emotional and behavioral difficulties: adolescents attending therapeutic day schools.

Family Environment and Adolescent Mental Health

Extensive research connects family environment to child and adolescent mental health outcomes. Poorer family functioning (e.g., higher conflict, lower support and open communication) is associated with emotional problems such as anxiety and depression (Auerbach & Ho, 2012; Hughes, Hedtke & Kendall, 2008; Knappe et al., 2009) and conduct problems (Karriker-Jaffe, Foshee, Ennett, & Suchindran, 2012; Pagani, Japel, Vaillancourt, & Tremblay, 2010; Schofield et al., 2012). In particular, poor family affective involvement may affect youth mental health. Under-involvement resembles detachment or even neglect, and is linked to emotional problems (Pace & Zappulla, 2012). On the other hand, over-involvement is comparable to intrusiveness or enmeshment, and is also associated with youth mental health problems (Green & Werner, 1996; Lovejoy, Graczyk, O'Hare, & Neuman, 2000). Overall, family environment (and family affective involvement in particular) may play an important role in children's stress response and mental health (Yap, Allen & Sheeber, 2007).

Coping and Adolescent Mental Health

Coping has been defined as volitional efforts to regulate oneself or the environment in response to stress (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001), and a number of coping models in youth have been described (see Skinner, Edge, Altman, & Sherwood, 2003 for a review). Theories of coping typically distinguish between engagement and disengagement coping (Carver & Connor-Smith, 2010). Engagement coping

encompasses attempts to face a stressor, and is generally associated with fewer mental health problems in youth, especially emotional problems. In contrast, disengagement coping involves attempts to detach from or avoid a stressor, and is associated with more emotional problems and possibly more behavioral problems, although findings vary by study and informant (see Compas et al., 2001 for a review). In the current study, we examined two engagement strategies (emotion-focused support-seeking and cognitive restructuring) and one disengagement strategy (avoidant actions). These three strategies represent empirically distinct categories of coping (Ayers et al., 1996) that can be modified through psychotherapy.

Familial Influences on Adolescent Coping

Theories of coping development

Theories of the development of coping suggest that family characteristics may influence children's coping (Kliewer, Sandler, and Wolchik, 1994; Skinner and Zimmer-Gembeck, 2007). This process is frequently referred to as coping socialization. While coping socialization can occur indirectly via parental modeling and coaching of adaptive coping strategies, it may also result directly from a supportive family environment, including warmth and acceptance (Kliewer et al., 1994; Kliewer, Fearnow, & Miller, 1996; Skinner and Zimmer-Gembeck, 2007). In particular, Kliewer and colleagues theorize that moderate levels of family affective involvement (i.e., not too high or low) within the family environment may promote youths' engagement coping by providing support when needed, while also encouraging independence and self-efficacy (Kliewer et al., 1994). For example, families with moderate affective involvement may promote emotion-focused support-seeking by encouraging children to initiate support-seeking and by responding with warmth and acceptance. In contrast, families that are under-involved may leave children developmentally unprepared to navigate stressful situations, while over-involved families may prevent opportunities for children to develop effective responses. Notably, theories of coping socialization via family environment are consistent with models of children's self-regulation, which also suggest that a family environment characterized by conflict and harshness may lead to maladaptive stress responses, such as disengagement in reaction to relatively mild stressors (Taylor & Stanton, 2007). Overall, these theoretical perspectives propose that family environment has a direct influence on the development of children's coping.

Research on coping socialization

Recent findings in the coping socialization literature support the notion that positive parent-child relationships are associated with more engagement coping and less disengagement coping (Gentzler, Contreras-Grau, & Kerns, 2005; Valiente, Lemery-Chalfant, & Swanson, 2008; Zimmer-Gembeck & Locke, 2007). However, previous studies involved community samples and typically focused on parental behaviors, rather than overall family environment, even though evidence suggests that family environment is directly and independently associated with children's coping, above and beyond parental behaviors (Kliewer et al., 1996). Furthermore, most studies on coping socialization have not examined outcomes of child coping, such as mental health. Additionally, most theory and research in this area

involves younger children. Only one prior study involved adolescents (Zimmer-Gembeck & Locke, 2007). That study examined associations between parental and teacher behaviors (involvement, structure, and autonomy support) and youth coping; findings indicated that parental behaviors were most strongly associated with coping independent of context (i.e., home or school), supporting the primary influence of parents compared to teachers on adolescent coping (Zimmer-Gembeck & Locke, 2007). However, mental health outcomes were not examined, and participants were community youth rather than youth with mental health difficulties, who may face a variety of challenges to effective coping beyond the influence of the family.

The Current Study: Does Coping Account for the Association Between Family Environment and Mental Health in Youth with Emotional and Behavioral Difficulties?

The current study extends prior research on family environment, coping, and adolescent mental health in several crucial ways. First, we examine links among these processes in youth attending therapeutic day schools due to emotional and/or behavioral difficulties; these adolescents represent a population with impairing mental health problems. The family environments of youth with mental health difficulties are more likely to be characterized by affective under-involvement or over-involvement and poorer general functioning (Jewell & Stark, 2003; Sheeber, Hops, Alpert, Davis, & Andrews, 1997). In such environments, coping strategies which are typically adaptive may be detrimental, and typically maladaptive coping strategies may be relatively adaptive. For example, avoidance may reduce conduct problems in the face of family conflict or affective over-involvement by helping youth to prevent aggression. In contrast, engagement strategies such as emotion-focused support-seeking from parents may actually be maladaptive in the context of poor communication skills within the family. Second, we examine family environment rather than parental behaviors. By assessing family environment, we capture not only dyadic parent-adolescent relationships, but also the quality of parent-parent relationships, parent-sibling relationships, potential relationships with extended family members, and “multi-adic” relationships among family members. This approach increases our ability to fully capture adolescents’ family context, which is associated with youth coping beyond the effects of the parent-child relationship (Kliewer et al., 1996). Further, according to theories of coping development (e.g., Kliewer et al., 1994), parents may model coping strategies during parent-parent or parent-sibling interactions within the family context, which then impact the adolescent’s use of coping strategies. As such, the current study may have implications for changing patterns of behavior across family members, including not only parents, but also siblings, other caretakers, and the adolescents themselves. Third, we focus on adolescents, whereas all but one previous study (Zimmer-Gembeck & Locke, 2007) assessed younger children. Older youth may be less reliant on parental scaffolding and more independent in their use of coping strategies; therefore the relationship between family environment and youth coping may be smaller. On the other hand, the coping styles of older youth (particularly those with emotional and conduct problems) may be more entrenched and more strongly associated with family environment due to longstanding exposure to family patterns.

We examined a general index of family functioning as well as a specific process, family affective involvement, and three coping responses (emotion-focused support-seeking, cognitive restructuring, and avoidant actions). Although we based our hypotheses on prior theory and research (e.g., Kliewer et al., 1994; Skinner & Zimmer-Gembeck, 2007; Zimmer-Gembeck & Locke, 2007), we acknowledge that associations among family environment, coping, and mental health may diverge from previous findings due to the nature of our sample, which represents families of youth with mental health difficulties. We examined separate models for emotional and conduct problems, and for family affective involvement and general family functioning. Research supports the theoretical and empirical distinction between emotional problems and conduct problems (Achenbach, 1982; Cicchetti & Toth, 1991), and the differences in underlying causes of emotional and conduct problems implies that treatment targets may be different. Similarly, prior research on family environment suggests that family affective involvement is a distinct dimension of general family functioning (Epstein, Baldwin & Bishop, 1983). Further, Kliewer and colleagues' theoretical model of coping development (Kliewer et al., 1994) suggests that family affective involvement may uniquely influence youth coping development. Thus, each of the tested models is based on theoretical and empirical distinctions between the constructs (i.e., emotional and conduct problems; affective involvement and general functioning).

Based on the previous literature on families and coping socialization, we hypothesized that poorer family affective involvement (i.e., under- or over-involvement) and poorer family general functioning would be associated with less emotion-focused support-seeking and cognitive restructuring coping, and more avoidant actions coping. Given prior research, we also expected that a poorer family environment would be associated with more emotional and conduct problems. Based on previous findings regarding coping and mental health, we also hypothesized that more emotion-focused support-seeking and cognitive restructuring (engagement strategies), and less avoidant actions (a disengagement strategy), would be associated with fewer emotional and conduct problems. Finally, to extend prior research, we tested our hypothesis that coping would act as an explanatory process linking family environment and youth mental health. Specifically, we predicted that emotion-focused support-seeking, cognitive restructuring, and avoidant actions, would partially account for the relationship between poorer family environment and more emotional and conduct problems.

Method

Participants

This study is part of a two-site (two large cities in the Midwest and Northeast), 3-arm randomized controlled trial to reduce risky sexual behavior among 417 youth (30.2% female, $N=126$) ages 13–20 ($M=15.25$ years; $SD = 1.47$) in therapeutic day schools. The current study only utilizes pre-intervention study data, which was collected before participants were assigned to an arm of the study intervention. Youth had been placed in therapeutic schools because they were unable to benefit from mainstreaming (i.e., regular education plus special education classes) or other personalized interventions (e.g., resource teacher, in-class aide), and needed full-time special education due to emotional or behavioral

difficulties (see Berkovitz, 1984 and Kennedy, Mitchell, Klerman, & Murray, 1976 for a description of therapeutic day schools). Therapeutic services at school are tailored to the student's mental health needs; therefore, educational and mental health services varied among students based on individual adolescents' needs. The sample was racially and ethnically diverse: 43.6% (N = 182) non-Latino White, 26.1% (N = 109) non-Latino Black/African-American, 11.8% (N = 49) Hispanic/Latino, 1.2% (N = 5) Native American/American Indian, 0.4% (N = 2) Asian/Pacific Islander, and 16.8% biracial/multi-racial (N=70). Youth were excluded from the study if they were diagnosed with a pervasive developmental disorder or active psychotic disorder, known to be HIV positive, currently pregnant, or wards of the state at the Midwestern site because the Department of Children and Family Services did not grant IRB approval in one state. Ninety-three percent of families approached provided written consent and assent (N=32 refused consent/assent). Reasons for refusal were not collected. Consistent with Brown et al. (2010), we calculated the percentage of teens who met threshold or sub-threshold criteria for psychiatric diagnoses on the Computerized Diagnostic Interview Schedule for Children (C-DISC; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). Based on adolescent reports, 56% qualified for at least one diagnosis; 9.2% qualified for internalizing disorders alone (i.e., generalized anxiety, major depression, posttraumatic stress), 9.2% qualified for mania or hypomania, 26.4% qualified for externalizing disorders alone (i.e., conduct, oppositional defiant), and 11.2% qualified for comorbid internalizing and externalizing disorders. These represent elevated rates of mental health disorders (56% had at least one diagnosable mental health disorder, compared to approximately one-fourth of the overall adolescent population in the past year; Merikangas, Nakamura, & Kessler, 2009). Further, by the nature of therapeutic day schools, the current sample of youth had more severe impairments in functioning within a mainstream academic setting compared to the general population.

Procedure

The institutional review boards at both sites approved all study procedures. Therapeutic day school staff identified eligible youth and contacted parents to request consent to release their contact information to the research team. The project recruiter followed up with a telephone call to provide more detail, screen for eligibility, and schedule a home visit to obtain written parental consent. Parental consent was obtained on an individual basis by research assistants in the youth's home or in another location that was convenient for the parent (e.g., public library). Following parental consent, youth provided assent on an individual basis at the school. Following youth assent, data was collected individually for all youths via audio computer-assisted self-interview (ACASI). ACASI has equivalent reliability as in-person interviews and may be easier and more acceptable than pencil and paper measures for individuals with severe mental health difficulties (Chinman, Young, Schell, Hassell, & Mintz, 2004). Research staff remained in the room to answer questions. Youth received \$25 for completing the survey. This study analyzed youth reports of family environment (affective involvement and general functioning), coping (emotion-focused support, avoidant actions, and cognitive restructuring), and emotional and conduct problems.

Measures

Demographics—Youth reported their age, gender, and race/ethnicity.

Family affective involvement and general functioning—Youth completed a shortened version of the Family Assessment Device (FAD; Epstein et al., 1983), which has shown strong reliability and construct validity in both psychiatric and non-clinical samples (Kabacoff, Miller, Bishop, Epstein, & Keitner, 1990; Miller, Epstein, Bishop, & Keitner, 1985). Two subscales were included: (1) family affective involvement and (2) family general functioning. Family affective involvement is defined as family members' degree of interest in and preoccupation with one another, including under- or over-involvement (e.g., "We are too self-centered" is an under-involvement item; "Even though we mean well, we intrude too much into each other's lives" is an over-involvement item). Family functioning is defined as support, acceptance, and open communication between family members (e.g., "In times of crisis we can turn to each other for support;" "Individuals are accepted for what they are;" "We confide in each other"). Scale scores ranged from 1 to 4 with higher scores indicating poorer family affective involvement and poorer family functioning. Internal consistency was high for the 7-item affective involvement scale ($r = .80$) and 12-item general functioning scale ($r = .77$).

Coping—Youth completed a shortened version of the Children's Coping Strategies Checklist (CCSC; Ayers et al., 1996) to assess general coping style in response to stressors experienced in the past month. The CCSC demonstrates adequate internal consistency and strong construct validity across numerous youth samples (Ayers et al., 1996; Sandler, Tein, & West, 1994; Zimmer-Gembeck & Locke, 2007). Three 4-item subscales were included in the present study: emotion-focused support-seeking, defined as expressing feelings to someone to gain understanding (e.g., "You told people how you felt about the problem," "You talked about your feelings to someone who really understood"), cognitive restructuring, defined as thinking about a stressor in a different way (e.g., "You told yourself that things would get better," "You told yourself that in the long run, things would work out for the best"), and avoidant actions, defined as behavioral avoidance of a stressor (e.g., "You tried to stay away from things that made you feel upset," "You avoided the people who made you feel bad"). Scale scores ranged from 1 to 4 with higher scores indicating greater use of the coping strategy. The emotion-focused support-seeking and cognitive restructuring scales were not modified from the original CCSC; however, the avoidant actions scale contained 1 modified item ("you tried to stay away from the problem" was changed to "you excused yourself from the situation"). This scale was modified because the new item more closely reflected one of the coping strategies taught in the intervention (i.e., finding ways to prevent aggressive conflict), and investigators intended to use this subscale to examine relationships with intervention effects. Internal consistency was high for the emotion-focused support scale (.82) and cognitive restructuring scale (.83), and fair for the avoidant actions scale (.68). Consistent with previous research on coping (e.g., Connor-Smith et al., 2000), we used proportion scores calculated in relation to the total coping response score to reduce potential response biases and differences in base rates of item endorsement between girls and boys. The proportion score represents how often a coping strategy was used relative to all strategies reported on the CCSC.

Emotional and conduct problems—The Strengths and Difficulties Questionnaire (SDQ; Goodman, Meltzer, & Bailey, 1998) is a brief behavioral screening for emotional,

conduct, hyperactivity, and peer problems within the past six months. The emotional and conduct problems scales were used in this study. Both scales consist of five items ranging from 0 to 10 with higher scores indicating greater problems. Emotional items correspond to internalizing problems and include: “I worry a lot,” and “I am often unhappy, depressed or tearful.” Conduct items correspond to externalizing problems and include: “I get very angry and often lose my temper,” and “I am often accused of lying or cheating.” Internal consistency was moderate for emotional problems (.75) but fair for conduct problems (.58).

Data Analyses and Statistical Power

We conducted preliminary analyses to examine relationships between site and demographic variables (youth age, race/ethnicity, gender) and study variables (family affective involvement and functioning, coping variables, and emotional and conduct problems). Levels of poor family affective involvement $t(411) = 3.75, p < .001$ and poor family general functioning $t(411) = 2.00, p = .04$ were higher at the Midwestern site than the Northeastern site. Emotion-focused support-seeking was positively correlated with age ($r = .13, p = .008$). Emotional problems were higher in girls than boys, $t(194) = 9.00, p < .001$ and differed by race/ethnicity, $F(5, 411) = 3.93, p = .002$, with higher levels in non-Latino White and biracial/multiracial youth compared to non-Latino Black/African-American youth. Conduct problems differed by race/ethnicity $F(5, 411) = 2.78, p = .01$, with higher levels in biracial/multiracial youth compared to non-Latino White youth. Conduct problems were also negatively correlated with age ($r = -.12, p < .05$). As a result of these significant associations, demographic variables (i.e., site, age, race/ethnicity, and gender) were controlled in the data analyses. We examined Pearson correlations among study variables, controlling for demographic variables, which revealed several significant correlations (see Table 1). Due to multiple tests, we report correlational results at both the .05 level of significance (i.e., without correcting for multiple correlations), and the .006 level of significance (Bonferroni correction for multiple correlations in the same family; $p = .05/8 = .006$). The normality (skewness and kurtosis) of the data was also examined and found to be within acceptable limits. Specifically, the Standard Skew Indices (SSIs; Malgady, 2007) of each of the variables ranged from 0.001 to 0.26, while the kurtosis of each variable ranged from -0.36 to 1.46 (using SPSS); acceptable values for kurtosis are from -3 to 3 (Maxwell & Delaney, 2004).

Next, we tested regression models for emotional and conduct problems. We tested the direct association between family environment (general functioning and affective involvement) and emotional and conduct problems, and the indirect association accounted for by coping, using the SPSS macro PROCESS (Hayes, 2013). PROCESS is a preferable option for analyzing the data in the current study for several reasons (Preacher & Hayes, 2004). First, PROCESS uses bootstrapping to test significance, which can account for non-linear indirect effects unlike the traditional Sobel test. As such, a Sobel test may (erroneously) indicate that an indirect relationship is non-significant, whereas PROCESS will be able to identify that the indirect relationship is significant (Preacher & Hayes, 2004). Further, PROCESS provides more information about the significance of indirect effects than the standard multiple linear regression analyses offered in SPSS, which do not test the significance of indirect effects. PROCESS yields unstandardized coefficients and bias corrected 95%

confidence intervals (CIs) around the effect, using a resample procedure of 1,000 bootstrap samples. CIs that do not cross zero indicate significant effects ($p < .05$). Given that data are cross-sectional, we interpreted coping variables as potential explanatory processes (i.e., variables explaining the associations between family environment and youth mental health) but refrained from use of terminology about mediation.

Regression analyses with PROCESS used listwise deletion to remove any case that is missing one or more variables in the model. The final sample used for these analyses was 413 due to missing questionnaire items for 4 participants. With the sample of 413 youth, power was .92 to detect statistical significance for one-tailed correlations of .15 or greater, .87 to detect significance for two-tailed correlations of .15 or greater, and .99 to detect significance for linear multiple regressions of effect size $f^2 = .15$ or greater with 0.05 probability.

Results

Correlations Among Family Environment, Coping, and Emotional and Conduct Problems

Partial correlations among study variables, controlling for site, age, race/ethnicity, and gender are reported in Table 1. Overall, poorer family environment (affective involvement and general functioning) was negatively associated with emotion-focused support-seeking and cognitive restructuring, but not associated with avoidant actions, and was positively associated with emotional and conduct problems. Results also indicated negative associations between cognitive restructuring and emotional and conduct problems. Emotion-focused support-seeking and avoidant actions were negatively associated with conduct problems but unassociated with emotional problems.

Linear Multiple Regression Analyses: Direct Associations of Family Environment with Emotional and Conduct Problems and Indirect Associations via Coping

Analyses were conducted for four models: two for emotional problems and two for conduct problems. Based on the results of bivariate correlation, cognitive restructuring was examined as a potential explanatory variable in the models predicting emotional problems, while emotion-focused support-seeking and cognitive restructuring were both examined as potential explanatory variables in the models predicting conduct problems. For all models, control variables (site, age, race/ethnicity, and gender) were included as covariates. Tables 2 and 3 present results of the linear multiple regression analyses.

For the first model predicting emotional problems, general family functioning was entered as the IV, family affective involvement and control variables were included as covariates, and cognitive restructuring was entered as the potential explanatory variable. Results indicated that the final model was significant, $F(6, 406) = 22.44, p < .001$, total Adjusted $R^2 = .25$. The direct effect of family functioning on emotional problems was not significant, but the indirect effect via cognitive restructuring was significant ($b = 0.09$, 95% CI [0.02, 0.25]). For the second model predicting emotional problems, family affective involvement was entered as the IV, family functioning and control variables were included as covariates, and cognitive restructuring was entered as the potential explanatory variable. As with the first

model, the final equation was significant, $F(6, 406) = 22.44, p < .001$, total Adjusted $R^2 = .25$. The direct effect of family affective involvement on emotional problems was significant ($b = 0.39$, 95% CI [0.01, 0.78]), and the indirect effect via cognitive restructuring was significant ($b = 0.03$, 95% CI [0.0004, 0.10]).

For the first model predicting conduct problems, family functioning was entered as the IV, family affective involvement and control variables were included as covariates, and emotion-focused support-seeking and cognitive restructuring were entered as the explanatory variables. Results indicated that the final equation was significant, $F(8, 404) = 13.00, p < .001$, total Adjusted $R^2 = .19$. The direct effect of family functioning on conduct problems was significant ($b = 0.64$, 95% CI [0.23, 1.05]), and the indirect effects via emotion-focused support-seeking ($b = 0.13$, 95% CI [0.03, 0.26]) and cognitive restructuring ($b = 0.15$, 95% CI [0.05, 0.29]) were each significant. For the second equation predicting conduct problems, family affective involvement was entered as the IV, family functioning and control variables were included as covariates, and emotion-focused support-seeking and cognitive restructuring were entered as the explanatory variables. As with the first model predicting conduct problems, the final model was significant, $F(8, 404) = 13.00, p < .001$, total Adjusted $R^2 = .19$. The direct effect of family affective involvement on conduct problems was significant ($b = 0.55$, 95% CI [0.23, 0.88]), but the indirect effects via emotion-focused support-seeking and cognitive restructuring were not significant.

We also conducted supplementary analyses to examine the possibility of interaction effects and effects related to school. We did not find a significant interaction of gender, race/ethnicity, age, or site with family environment and coping variables in predicting emotional or conduct problems. School data was only coded for the Midwestern site. Thus, we tested for school clustering effects (using a mixed-effects regression model) in the data for the Midwestern site for which this information was available. Although we found evidence of a school clustering effect for emotional problems, this did not alter the results of the regression analyses (i.e., it did not change the magnitude or significance of family environment and coping variables in the regression models).

Discussion

This study examined the role of coping in the relationship between family environment and mental health problems in adolescents with emotional and behavioral difficulties. As expected, our results replicated prior research showing that a family environment characterized by high conflict, low communication, and affective under- or over-involvement was associated with less engagement coping (i.e., emotion-focused support-seeking and cognitive restructuring) and more emotional and conduct problems, and that less cognitive restructuring and emotion-focused support-seeking was associated with more mental health problems. The focus of the current study was whether coping functioned as an explanatory variable in the relationship between family environment and emotional and conduct problems. Notably, results indicated that cognitive restructuring accounted for the relationship between family environment and emotional problems. For conduct problems, the role of coping differed for general family functioning and family affective involvement.

The results extend prior theory and research on family environment, coping, and mental health in adolescence. Our results show that poorer family affective involvement (i.e., a pattern of under- or over-involvement) and poorer family functioning (i.e., less support and open communication, higher conflict) are related to less cognitive restructuring and emotion-focused support-seeking among teens, engagement strategies that are typically adaptive in managing stress. These findings are consistent with theory that a positive family environment facilitates the development of adaptive coping strategies (Kliewer et al., 1994). However, our results do not indicate the directionality of the associations between family environment and coping; indeed, it is likely that bidirectional relationships exist among these processes. Just as a family with high conflict and dysfunctional affective involvement may not provide sufficient scaffolding or modeling for youth to use effective coping strategies, less engagement coping by adolescents may result in poorer emotion regulation, more behavioral problems, and disruptions in family environment.

As expected, less cognitive restructuring was associated with more emotional problems. These findings are consistent with prior research supporting the role of cognitive restructuring in prevention and treatment of emotional disorders in youth (e.g., Clarke et al., 2001). Additionally, more frequent use of both cognitive restructuring and emotion-focused support-seeking was associated with fewer conduct problems. Thus, our results suggest that engagement coping strategies such as these may be important mechanisms of prevention and intervention for conduct problems, perhaps by decreasing oppositional or aggressive behaviors in response to stress.

Contrary to expectations and some previous research with community youth (e.g., Wadsworth & Compas, 2002), disengagement coping (i.e., avoidant actions) was not associated with family environment nor with emotional problems, and was negatively associated with conduct problems. Interestingly, previous findings on disengagement coping and conduct problems have been mixed, with some research suggesting that conduct problems are associated with less disengagement coping when based on youth self-report (Compas et al., 2001). Further, behavioral avoidance in youth with mental health difficulties may actually reflect a problem-solving strategy, especially in the context of dangerous or risky situations (e.g., a fight). Notably, an item on the avoidant actions scale of the coping measure was modified to reflect a strategy that was later taught during the study intervention ("I excused myself from the situation"), based upon the idea that behavioral avoidance may be relatively adaptive for youth who otherwise struggle with poor behavioral control.

Our findings also revealed that the association between family environment and emotional problems was partially to fully accounted for by cognitive restructuring, but results for conduct problems differed depending on what aspects of family environment were evaluated (i.e., general family functioning vs. family affective involvement). These results suggest that the ability to use cognitive restructuring in response to stress may reduce the impact of a negative family environment on emotional difficulties. Indeed, in many cases youth may use cognitive restructuring to mitigate the effects of family-related stress (e.g., family conflict), thereby promoting their own mental health. In contrast, cognitive restructuring and emotion-focused support-seeking only partially explained the relationship between family general functioning (and not affective involvement) and conduct problems. Family environment

(especially affective involvement) may continue to influence conduct problems even if teens are using adaptive coping strategies. This finding suggests that factors which might influence co-variation between coping and conduct problems (e.g., inhibitory control, temperament) are different from factors which might influence co-variation between family environment and conduct problems (e.g., exposure to and normalization of violence). Overall, these findings extend prior theories of coping development by suggesting that models of coping socialization may differ for emotional versus conduct outcomes. Specifically, family context may socialize effective coping related to emotional difficulties, but other contextual factors (e.g., peers) may socialize effective coping related to conduct problems during adolescence.

Given the cross-sectional nature of this study, implications for intervention are tentative and future research is needed to fully inform treatment recommendations. Nevertheless, our results hint at differential targets and priorities for intervention for emotional versus conduct problems. For example, our results show that cognitive restructuring explains much of the association between negative family environment and more emotional problems. Therefore, with regard to emotional problems, improving cognitive restructuring may protect against multiple aspects of a negative family environment, and therapists may want to prioritize an individual or group therapy setting with the adolescent to teach this skill. Consistent with these implications, empirically supported depression interventions for youth (e.g., Clarke et al., 2001) often emphasize this skill. For conduct problems, however, our results indicate that cognitive restructuring and emotion-focused support-seeking did not explain the relationship between family environment and conduct problems to the same extent as for emotional problems. This suggests that both family and individual therapies are priorities for treatment and may be utilized concurrently for conduct problems. Prior theory and research supports the use of multi-systemic interventions for conduct problems (Curtis, Ronan & Borduin, 2004), and our results likewise highlight that multiple individual and contextual targets are important when treating conduct difficulties. As such, therapists may have more flexibility in how they structure treatment, and practical issues (e.g., when other family members are available to attend therapy) may be considered in planning a treatment agenda for conduct problems. Given our focus on family environment, rather than just parent-adolescent relationships, our results also have implications for intervention with other dyads (e.g., interactions with other caretakers, such as grandparents, and siblings). A common barrier to treatment in youth with severe mental health difficulties is the adolescent's unwillingness to engage in therapy and low motivation to change behavior. In such cases, our findings suggest it may be helpful to intervene with other family members. For example, if a teen is unwilling to engage in therapy, intervention could start by focusing on improving communication among parents/caretakers, siblings, and extended family which may improve adolescent mental health even without the adolescent's direct participation in the therapeutic process. Changes in interactions among parents, grandparents, other caretakers, and siblings of the target youth may still have a positive impact on the home environment and thereby improve adolescents' mental health. This interpretation of our findings is consistent with the Family Stress Model (Conger & Conger, 2002), which suggests that parents' marital relationships may directly and indirectly impact teens' development and mental health.

Study limitations warrant careful consideration of the results. The data are cross-sectional, single-informant, and mono-method. Future longitudinal studies should evaluate the directionality of these relationships. Results are also limited by adolescent reports on all variables, which may have increased methodological co-variance and provide a singular perspective on individual and family functioning. In addition, we did not assess or control for the types of mental health treatment that participants received while attending the therapeutic schools, but these interventions may have differentially impacted their mental health outcomes. Future studies should also extend assessments of coping. While emotion-focused support-seeking, cognitive restructuring, and avoidant actions represent empirically-supported dimensions of coping (i.e., engagement and disengagement), they do not encompass the full range of engagement and disengagement strategies (e.g., Connor-Smith et al., 2000; Skinner et al., 2003). Additionally, we tested overall coping style rather than situation-specific coping. This approach identifies adjustment across stressors (Ayers et al., 1996), but youth may use different strategies in different contexts (Seiffge-Krenke, Aunola, & Nurmi, 2009) and this may have implications for adaptation in dysfunctional family environments. For example, avoidant coping in some situations (e.g., direct exposure to violence) may be adaptive. Thus, future studies should examine coping in response to relevant youth stressors (e.g., peer pressure). Another limitation is that individual participant data was nested within schools, but school data was only coded for one site, which limited our ability to test school clustering effects for the entire sample.

Notably, the correlation effect sizes for this study were generally around 0.2, which is between a small and moderate effect (Cohen, 1992). The magnitude of these effect sizes may limit the clinical significance of our findings, even though they are statistically significant. On the other hand, even small effect sizes may have clinical importance in high-risk populations, such as youth in therapeutic schools, because identifying effective intervention targets is more challenging in these youth. In addition, our regression models (which included both family environment and coping as predicted) accounted for 25% of the variance in emotional problems, but only 19% of the variance in conduct problems. This finding suggests that our model may have slightly more clinical significance for emotional problems than for conduct problems in these adolescents, although there was a larger effect of gender in the model predicting emotional problems, and the internal consistency for our measure of conduct problems was lower than desirable and could have limited our ability to detect associations with conduct problems.

Despite these limitations, the study has numerous strengths, including one of the largest samples of youth with serious mental health problems drawn from two U.S. geographical areas. Our measures are grounded in empirically-supported theoretical models of family environment, coping, and youth mental health. Furthermore, this is one of the first studies to examine associations between coping socialization processes and mental health problems in adolescents. Findings implicate the role of coping in the relationship between family environment and emotional and conduct problems in youth with mental health difficulties, and suggest the utility of addressing coping skills to improve individual and family functioning.

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Partial Correlations Among Family Environment, Coping and Emotional and Conduct Problems, Controlling For Study Site, Youth Age, Race/Ethnicity, and Gender

Table 1

Measure	M	SD	1	2	3	4	5	6	7
1. FAD Family Affective Involvement	2.44	0.62	–						
2. FAD Family General Functioning	2.31	0.50	.42**	–					
3. CCSC Emotion-focused Support Coping	0.20	0.04	–.12*	–.20**	–				
4. CCSC Avoidant actions Coping	0.22	0.04	.00	.01	–.22**	–			
5. CCSC Cognitive restructuring Coping	0.21	0.04	–.15**	–.22**	–.10*	–.13*	–		
6. SDQ Emotional Problems	3.29	2.53	.17**	.17**	.03	.06	–.15**	–	
7. SDQ Conduct Problems	3.71	2.05	.29**	.31**	–.21**	–.10*	–.24**	.21**	–

Note. FAD = Family Assessment Device, CCSC = Children's Coping Strategies Checklist, SDQ = Strengths and Difficulties Questionnaire. CCSC scores were calculated as proportion scores in relation to the total coping response score. Higher scores on FAD indicate poorer family environment.

* $p < .05$

** $p < .006$ (Bonferroni correction for multiple comparisons).

Table 2
Linear Multiple Regression Analyses Predicting Adolescents' Emotional Problems (N=413)

Variable	Unstandardized β	SE	Standardized β	t	CI
Constant	3.57	1.58		2.27	0.47 – 6.67
Site	–0.41	0.23	–0.08	–1.75	–0.86 – 0.05
Race/Ethnicity	0.15	0.05	0.12	2.58*	0.03 – 0.26
Age	0.03	0.07	0.02	0.35	–0.12 – 0.17
Gender	–2.33	0.24	–0.42	–9.77**	–2.80 – –1.86
Family Affective Involvement	0.39	0.20	0.10	1.99*	0.01 – 0.78
Family General Functioning	0.44	0.25	0.09	1.84	–0.03 – 0.93
Cognitive Restructuring Coping	–5.83	2.64	–0.10	–2.20*	–11.03 – –0.62
Adjusted R^2					0.25
$F (df)$					20.11** (7, 405)

Note.

* $p < .05$

** $p < .01$.

Table 3
Linear Multiple Regression Analyses Predicting Adolescents' Conduct Problems (N=413)

Variable	Unstandardized β	SE	Standardized β	t	CI
Constant	6.60	1.42		4.66	3.82 – 9.39
Site	–0.08	0.19	–0.02	–0.41	–0.46 – 0.30
Race/Ethnicity	0.07	0.05	0.07	1.42	–0.03 – 0.16
Age	–0.15	0.06	–0.11	–2.36*	–0.27 – –0.03
Gender	–0.21	0.20	–0.05	–1.04	–.60 – 0.19
Family Affective Involvement	0.56	0.17	0.17	3.36**	0.23 – 0.88
Family General Functioning	0.64	0.21	0.16	3.08**	0.23 – 1.05
Emotion-focused Support Seeking Coping	–8.24	2.15	–0.18	–3.84**	–12.45 – –4.02
Cognitive Restructuring Coping	–9.28	2.24	–0.19	–4.14**	–12.69 – –4.87
Adjusted R^2					0.19
F (df)					13.00 (8,404)

Note.

*
 $p < .05$

**
 $p < .01$.