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Evaluating school and peer protective factors in the effects of interparental conflict on adolescent threat appraisals and self-efficacy

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Abstract

Introduction: Recent work has sought to understand how family-specific risk, such as exposure to interparental conflict, may generalize to developmentally-salient processes in adolescence. A cascade model has been identified in which conflict-specific threat appraisals may erode adolescents' self-efficacy over time, and in turn, undermine their psychological well-being. The goal of this study was to integrate success in the school and peer contexts as potential contextual protective factors that may mitigate the effects of interparental conflict on self-efficacy.

Methods: We tested the additive and interactive effects of success in school and peer contexts on adolescent self-efficacy to better understand these ecological contextual factors for a family risk model. Analyses were conducted using structural equation modeling with a sample of 768 two-parent U.S. families across three measurement occasions. Interparental conflict, threat appraisals, self-efficacy, and school success and peer support were measured using multiple, established scales.

Results: Results supported the additive effects model, in that school success and peer support significantly contributed to general self-efficacy above and beyond the effects of threat appraisals of interparental conflict, but did not moderate the association between threat appraisals and self-efficacy.

Conclusions: Findings indicate that strengths in school and peer contexts have potential to compensate for, but do not appear to buffer, the negative effects of threat appraisals of interparental conflict and underscore the importance of these contexts for understanding multifinality in outcomes of adolescents exposed to interparental conflict.

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Conflicts of interest

The authors have no competing interests to declare.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.adolescence.2018.12.005>.

Keywords

Cognitive-contextual framework; Interparental conflict; Threat appraisals; Self-efficacy; School success; Peer support

The impact of interparental conflict on adolescent adjustment is well studied, with evidence for associations between interparental conflict and externalizing and internalizing behavior problems (Cummings, George, McCoy, & Davies, 2012; Grych & Fincham, 2001), low self-esteem (Siffert, Schwarz, & Stutz, 2012), and poor academic performance (Harold, Aitken, & Shelton, 2007). The cognitive contextual framework (Grych & Fincham, 1990) highlights two critical factors that can explain how interparental conflict confers risk to adolescent development: 1) the adolescent's cognitive evaluations of the conflict and 2) the context in which the conflict occurs.

Studies within the cognitive contextual framework have identified threat appraisals as a key mechanism linking interparental conflict and youth adjustment outcomes (e.g., Atkinson, Dadds, Chipuer, & Dawe, 2009; Fosco & Bray, 2016; Gerard, Buehler, Franck, & Anderson, 2005; Grych, Harold, & Miles, 2003). Adolescents may perceive interparental conflict as threatening for a variety of reasons. They may worry that they will be drawn into conflict or that conflict will disrupt their relationship with their parents (Atkinson et al., 2009). In addition, adolescents may fear that conflict foreshadows marital dissolution, escalation of conflict into violence, or parent-child conflict (Grych, 1998; Grych, Seid, & Fincham, 1992). The ability to perceive environmental threat is potentially advantageous in the short-term, as it helps orient the individual towards sources of danger in the environment and facilitates allocation of resources toward self-preservation (Davies & Woitach, 2008); however, repeated or sustained threat appraisals in the context of interparental conflict are thought to increase sensitivity to threat during future conflicts (Knafo, Jaffee, Goeke-Morey, Papp, & Cummings, 2013).

Interparental conflict occurs within a broader context that shapes the impact and meaning of conflict for adolescents (Fosco, DeBoard, & Grych, 2007; Grych & Fincham, 1990). Guided by this proposition, a handful of studies now support the role of contextual factors in the link between interparental conflict and threat appraisals, including patterns of emotional expression in the family (Fosco & Grych, 2007), parent-child relationship quality (DeBoard, Fosco, Raynor, & Grych, 2010), and attachment style (Camisasca, Miragoli, Di Blasio, & Grych, 2017). These studies provide evidence for two ways in which contextual factors may operate in this model: *additive effects* in which contextual factors may have a unique, "main effect" relation with threat appraisals, above and beyond the association with interparental conflict; or a *buffering effect* in which contextual factors may alter the degree to which interparental conflict is associated with threat appraisals. Thus, this literature suggests that positive family functioning may either directly shape adolescents' threat appraisals, or may moderate the association between interparental conflict and threat. In light of this evidence-base, we seek to expand this literature in two new directions: to focus on self-efficacy, a developmentally-salient outcome during adolescence, and to expand the notion of context beyond the family to consider school and peer contextual factors in this model.

1. Interparental conflict and adolescent self-efficacy: an ecological context perspective

Self-efficacy is defined as an individual's beliefs regarding their ability to accomplish goals and overcome challenges (Bandura, 1989a), and is theorized to underpin task selection, expenditure of effort, perseverance, and personal accomplishment (Bandura, 1997; Pajares, 2006). Self-efficacy is a particularly important construct during adolescence, a developmental period marked by increasing autonomy from parents (Laursen & Collins, 2009; Smetana, Campione-Barr, & Daddis, 2004; Steinberg & Silverberg, 1986), and an overall need for self-sufficiency and competence (Bandura, 1997; Erikson, 1963). Robust empirical support exists for the critical role of self-efficacy during adolescence, with evidence for associations between self-efficacy and psychological adjustment (Cicognani, 2011; Marcionetti & Rossier, 2016; Rudy, Davis, & Matthews, 2012; Vieno, Santinello, Pastore, & Perkins, 2007), academic achievement (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996; Lent, Brown, & Larkin, 1984; Pajares, 1996, 2003; Wigelsworth, Qualter, & Humphrey, 2017; Zuffiano et al., 2013), and career aspirations (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001).

Recent research within the cognitive contextual framework indicates a developmental cascade model during early adolescence in which interparental conflict is associated with conflict-specific (i.e., threat) appraisals; which in turn were associated with diminished self-efficacy. Finally, diminished self-efficacy was a robust risk factor for greater internalizing and externalizing problems as well as reduced subjective well-being (Fosco & Feinberg, 2015). A strength of this study was the emphasis on the generalization of conflict-specific threat appraisals to a more generalized self-evaluation as self-efficacious. Although prior work indicates that interparental conflict - and threat appraisals in particular - undermines self-efficacy, adolescents draw upon experiences, challenges and successes in multiple domains of their life that inform their sense of self-efficacy.

The idea that self-efficacy is multiply determined across contexts is in line with a resilience perspective, in which risk may be offset by positive assets and resources (Masten, Cutuli, Herbers, & Reed, 2009). Moreover, resilience models emphasize additive and buffering processes in understanding how individuals cope with adversity (Masten et al., 2009), and suggest that developmental outcomes are dependent on the combination of risks and strengths experienced across contexts at a given time (Grych, Hamby, & Banyard, 2015). These perspectives provide a compelling reason to broaden the scope beyond the family in search of protective factors for self-efficacy during adolescence. Outside of the family, school and peer relationship contexts are of particular relevance to adolescents (Aikins, Bierman, & Parker, 2005; Albert, Chein, & Steinberg, 2013; Brown & Larson, 2009; Eccles & Roeser, 2011).

1.1. School success as a context for self-efficacy

Theoretical work on the formation of self-efficacy emphasizes the role of *mastery experiences* - accomplishments that provide insight into one's capabilities while informing beliefs about the likelihood of achieving success in the future (Bandura, 1997). The school

setting is particularly ripe for *mastery experiences* during adolescence, as classrooms are structured to provide students opportunities for goal-setting, skill improvement, and mastery (Schunk & Meece, 2006), along with structured feedback and support from teachers (Chin, 2006; Federici & Skaalvik, 2014; Wentzel, 2009). Experiencing academic success and subject mastery is associated with positive self-efficacy beliefs during adolescence (Britner & Pajares, 2001; Shell, Colvin, & Bruning, 1995). Research also suggests that the broader school environment may foster development of self-efficacy beliefs, with empirical support for associations between school belonging and self-efficacy (McMahon, Wernsman, & Rose, 2009; Uwah, McMahon, & Furlow, 2008; Viena et al., 2007). Collectively, theoretical work and empirical findings underscore the value of the school context for fostering positive self-efficacy beliefs during adolescence.

1.2. Supportive peer relationships as a context for self-efficacy

Peer relationships represent a second important context for adolescent self-efficacy development. In outlining theoretical sources of self-efficacy, Bandura (1997) highlighted the role of *social persuasion*, which refers to the role of social feedback or judgments in shaping evaluations of one's own capabilities. Peers may offer a uniquely powerful source of *social persuasion* during adolescence given elevated susceptibility to peer influence (Albert et al., 2013; Albert & Steinberg, 2011; Steinberg & Monahan, 2007), with positive or supportive evaluations and feedback from peers potentially helping to shape positive self-efficacy beliefs (Bandura, 1997). Empirical research on peer support during adolescence supports this perspective, with positive peer support associated with higher self-efficacy in social contexts (McFarlane, Bellissimo, & Norman, 1995), as well as higher general self-efficacy (Viena et al., 2007).

2. The present study

Historically, the cognitive-contextual framework has focused on family functioning and individual factors as context to interparental conflict (Fosco et al., 2007; Grych & Fincham, 1990). In the present investigation, we seek to expand this evidence base by drawing on two key domains outside of the family - the school and peer contexts - to better understand how they may offer sources of strength in mitigating the negative effects of exposure to interparental conflict for adolescent self-efficacy. Building on a developmental cascade model in which adolescents' conflict-specific threat appraisals appear to generalize into their general sense of self-efficacy (Fosco & Feinberg, 2015), we drew on resilience theory (e.g., Grych et al., 2015; Masten et al., 2009) to elucidate the nature by which cross-contextual assets and risks may influence self-efficacy in two possible ways. First, we draw on an *additive-effects hypothesis* in which school success, peer support, and threat appraisals of interparental conflict may independently contribute to adolescents' general self-efficacy development. In such a model, school success and peer support may promote positive general self-efficacy by compensating for the negative effects of threat appraisals of interparental conflict. Alternatively, we considered a *context-buffering hypothesis*, in which school and peer contexts would moderate the relationship between threat appraisals and self-efficacy, as suggested by an interaction model of resilience (Masten et al., 2009). In such a model, school success and peer support may serve as a buffer in the progression from

conflict-specific threat appraisals to diminished self-efficacy. These research questions were evaluated by leveraging a large, longitudinal sample of two-parent families.

3. Method

3.1 Procedure

This study utilizes data collected from PROSPER (PROmoting School-community-university Partnerships to Enhance Resilience), a delivery system for evidenced-based interventions guided by a three-component community-university partnership model (Spoth, Greenberg, Bierman, & Redmond, 2004). In the PROSPER model, the three components are local community teams, state-level university researchers, and a Prevention Coordinator team in the land grant university Extension System. Community teams oversaw implementation of family and school-based interventions in their communities with support from Prevention Coordinators, who provided continuous technical support for intervention implementation and served as liaisons between community teams and university researchers. All research was conducted under the supervision of a university IRB and was in compliance with all ethical standards in the field.

PROSPER recruited 28 school districts within rural communities in Iowa and Pennsylvania in the United States. Eligibility criteria for communities included a) school district enrollment between 1300 and 5200 students and b) 15% or more of students eligible for free or reduced-cost school lunches. Communities were blocked based on school district enrollment and geographic location before being randomly assigned to partnership interventions ($n = 14$) or programming “as usual” comparison conditions ($n = 14$). Community teams selected one school and one family evidence-based intervention from a menu of evidence-based programs and oversaw implementation within their community. All communities chose the Strengthening Families Program: For Parents and Youth 10–14 for the family-based intervention. For the school-based intervention, six communities selected the All Stars curriculum, four selected Project Alert, and four selected Life Skills Training. Programs were implemented for two successive cohorts of 6th graders, one year apart. All participating students were eligible for in-class assessments, with 10,849 students completing baseline assessments. (For more information, see Spoth, Gyll, Lillehoj, Redmond, & Greenberg, 2007).

A random sub-sample of families of 6th grade students ($n = 2267$) from the second cohort were given the opportunity to participate in in-home assessments, with 43% of families completing the assessments ($n = 977$) during Wave 1. For the in-home sample, the adolescent, mother, and father independently completed survey questionnaires and an interview beginning in the fall of the student’s 6th grade year.

3.2. Participants

In order to address research questions relevant to interparental conflict, we selected two-parent families for analyses from the broader PROSPER participant population. For study purposes, two-parent family status was defined by parental survey responses which indicated they were either married and currently living with their spouse, or living with a partner in a

steady relationship. At Wave 1, the two-parent sample included 768 families, with a retention rate of 82% ($N = 631$) through Wave 3. The three waves of data were collected during the adolescents' 6th grade fall, 6th grade spring, and 7th grade spring. Participants' mean ages at Wave 1 were: mothers ($M = 38.7$, $SD = 6.05$); fathers ($M = 41.2$, $SD = 7.14$); and adolescents ($M = 11.3$ years, $SD = 0.49$). At subsequent time points, average ages for adolescents were 11.9 years at Wave 2 and 13.0 years at Wave 3. Caregiver relationships for females included "mother" (94.9%), "stepmother" (1.3%), and other parental figures (3.8%). Caregiver relationships for males included "father" (75.3%), "stepfather" (16.9%), and other parental figures (7.8%). Participating families resided in either Iowa (61%) or Pennsylvania (39%), with 47% of adolescents identifying as male. The median household income was \$52,000, and 64% of adolescents had parents with some post-secondary education. The race of adolescents were White (89%), Hispanic (6%), Asian (1%), African American (1%), and Other (3%).

3.3. Measures

3.3.1. Interparental conflict—Mothers and fathers indicated the frequency of interparental conflict behaviors over the past month by responding to seven items in a measure from the Iowa Youth and Families Project (Conger, 1989). These items had a 7-point scale (1 = *Always* to 7 = *Never*). A sample item was "hit, push, grab, or shove you". This scale is correlated with marital dissatisfaction and distress (Cui & Conger, 2008), as well as observer ratings of marital conflict (Harold, Fincham, Osborne, & Conger, 1997). Mother and father scales were computed as item averages and reverse-coded with higher values indicating more frequent conflict. Mother and father report on interparental conflict were each a manifest indicator on the latent variable. Cronbach alphas for mother and father scores at W1 were both 0.89. Adolescents completed a single item assessing the frequency of conflict behaviors between parents on a 5-point scale (1 = *Always* to 5 = *Never*). The item read "Thinking about your parents or guardians, how often would you say they argue or disagree with each other?" Scores were reverse-coded with higher values indicating more frequent conflict. Adolescent report on interparental conflict was the third manifest indicator of the latent variable.

3.3.2. Perceived threat—Adolescent perceived threat of interparental conflict was assessed using four items from the Children's Perceptions of Interparental Conflict Scale, a widely used measure with sound psychometric properties in samples of children, and adolescents (CPIC; Grych, Seid, & Fincham, 1992; Grych, Raynor & Fosco, 2004). Adolescents indicated agreement with statements describing interparental conflict on a 5-point scale (1 = *Strongly Agree* to 5 = *Strongly Disagree*). A sample item was "When my parents argue I'm afraid that they will yell at me too". Items were reverse coded with higher values indicating greater perceived threat. Cronbach's alphas were .86 and .87 for W1 and W2, respectively.

3.3.3. Self-efficacy—Adolescent self-efficacy was measured using five items from the self-efficacy scale (Pearlin & Schooler, 1978), a widely used and psychometrically sound instrument with strong reliability and validity. Adolescents indicated feelings of general self-efficacy on 5-point scale (1 = *Strongly Agree* to 5 = *Strongly Disagree*). A sample item was

“I often feel helpless in dealing with the problems in life”. Individual items were coded so that higher values reflected higher self-efficacy. Cronbach’s alphas were .79 and .80 at W1 and W3, respectively.

3.3.4. School success—School success was a latent variable with four manifest indicators assessed at W2. The first manifest indicator was the 9-item School Adjustment Questionnaire (Conduct Problems Prevention Research Group, 1999). Adolescents, mothers, and fathers reported on perceptions of adolescents’ global school success during the prior school year on a 5-point scale (1 = *Never True* to 5 = *Always True*). A sample item was “I had a good year at school.” Individual items were coded so that higher values reflected greater school success. Adolescent, mother, and father scores were standardized and averaged to create a single composite score for global school success. Cronbach’s alphas for adolescent, mother, and father scores were 0.81, 0.85, and .84, respectively, and were correlated $r = 0.50$ to 0.67 , p ’s < 0.01 .

The second manifest indicator was the 5-item School Liking Scale (Schaufeli, Salanova, González-Romá, & Bakker, 2002). Adolescents indicated enjoyment of school on a 5-point scale (1 = *Never True* to 5 = *Always True*). A sample item was “I like being in my school”. Individual items were coded so that higher values reflected greater school satisfaction. Cronbach’s alpha for W2 was 0.83.

The third manifest indicator was four items adapted from Bandura’s (1989b) Multidimensional Scales of Perceived Self-Efficacy. Adolescents indicated general ability to focus and persist on school tasks and assignments on a 5-point scale (1 = *Never True* to 5 = *Always True*). A sample item was “I know how to study and pay attention in class so that I do well in school.” Cronbach’s alpha for W2 was 0.79.

The fourth manifest indicator was a composite score, averaging adolescents’, mothers’, and fathers’ standardized ratings of school grades on a single item using a 9-point scale (1 = *Mostly A’s* to 9 = *Mostly F’s*). Prior work suggests that self-report indicators of GPA are highly correlated with school records (Zimmerman, Caldwell, & Bernat, 2002). The items were reverse coded so that higher scores reflected higher grades. Cronbach alphas ranged from 0.76 to 0.92.

3.3.5 Peer support—Peer support at W2 was a latent variable with two manifest indicators. The first manifest indicator included eight items from the Friendship Quality Questionnaire - Revised (Parker & Asher, 1993), while the second manifest indicator included five items from the same scale. For the peer support scale adolescents completed eight items regarding how supported they feel by their friends on a 5-point scale (1 = *Not At ALL True* to 5 = *Really True*). A sample item was “I can count on my friends when I need them.” Adolescents also completed five items regarding how supported they feel by their best friend on a 5-point scale (1 = *Strongly Agree* to 5 = *Strongly Disagree*). A sample item was “this person helps me when I need help.” Peer and best-friend support were combined into a single, composite variable - peer support. Items were reversed coded so that higher scores reflected higher support. Cronbach alphas for peer support and best friend support at W2 were 0.78 and 0.87, respectively.

4. Results

Correlations, means and standard deviations for all variables included in the model are reported in Table 1 (using scale averages in cases when latent variables were estimated from item-level data).

We then examined the data for patterns of missingness. First, we conducted Little's MCAR test, which indicated that data were not missing completely at random ($\chi^2(2059) = 2405.32$, $p < .01$). We tested whether baseline variables, family income, living with two biological parents, parent education, and youth sex were associated with whether data were missing at later measurement occasions. Youth sex was not associated with missingness. Families with higher parent education were more likely to provide data at later time points (r^2 's = 0.20–0.25, p 's < 0.01). Living with two biological parents was associated with less missing data for W2 school success ($r = 0.22$, $p < .01$). Families with higher income also was associated with better retention (r^2 's = 0.10–0.22, p 's < 0.05).

Structural equation models were estimated using Mplus version 7.4 (Muthén & Muthén, 2013), using full information maximum likelihood estimation, combined with including baseline variables that account for missingness, to reduce potential bias due to missing data at later waves (Schlomer, Bauman, & Card, 2010; Widaman, 2006). Model fit was evaluated for adequacy based on established criteria (Hu & Bentler, 1999): comparative fit index (CFI > 0.95), nonnormed or Tucker-Lewis index (TLI > 0.95), root mean square error of approximation (RMSEA < 0.08) and standardized root mean square residual (SRMR < 0.08).

To ensure structural equation models were appropriate for our data, we evaluated whether there were design effects due to sampling across 28 communities. First, we examined the ICCs for W2 threat appraisals and W3 self-efficacy, which were quite small (ICC's = 0.025 and 0.024, respectively). Then, by calculating the ICC*average cluster size, we determined that any design effects on our models were negligible (0.56 and 0.52; both below 2.0). Thus, it was appropriate to proceed with the structural equation model at a single level.

We then computed the initial model, which fit the data well ($\chi^2(404) = 923.59$, $p < .01$; CFI = 0.93; TLI = 0.92; RMSEA = 0.04). The structural equation model is presented in Fig. 1. Correlations within measurement occasions and covariates were estimated in the structural equation model but are omitted from the figure for ease of presentation. In addition, all endogenous latent variables were regressed on covariates. None of the covariates predicted T2 threat appraisals or T3 self-efficacy. However, boys had lower school success ($b = -0.28$, $SE = 0.05$, $\beta = -0.23$, $p < .01$) and lower quality peer relationships ($b = -0.21$, $SE = 0.03$, $\beta = -0.24$, $p < .01$), on average. In addition, family income was positively associated with school success ($b = 0.04$, $SE = 0.01$, $\beta = 0.15$, $p < .01$).

Turning to the hypothesized paths, interparental conflict was associated with increases in threat appraisals by T2 ($b = 0.27$, $SE = 0.11$, $\beta = 0.13$, $p < .05$); in turn, threat appraisals at T2 were associated with decreases in self-efficacy by T3 ($b = -0.15$, $SE = 0.03$, $\beta = -0.22$, $p < .01$), consistent with previously reported findings (Fosco & Feinberg, 2015). Germane to the additive-effects hypotheses for school and peer contextual factors, findings supported an

additive effects perspective. Specifically, adolescents with greater school success reported increases in self-efficacy by T3 ($b = 0.19$, $SE = 0.06$, $\beta = 0.19$, $p < .01$) over and above the effects of threat appraisals. Likewise, adolescents who benefitted from more supportive peer relationships also reported increases in self-efficacy ($b = 0.19$, $SE = 0.08$, $\beta = 0.13$, $p < .05$).

We then re-calculated the structural equation model to test the context-buffering hypotheses in which school success or peer support moderates the degree to which threat appraisals are associated with decreases in self-efficacy over time. This was accomplished by adding two T2 interaction terms to the structural equation model – school success x threat appraisals and peer support x threat appraisals – as additional predictors of self-efficacy at T3. Both interaction terms were not statistically significant.

In a final step, we tested whether the associations among the variables were the same for (a) males and females, (b) youth living with both biological parents and those who were not, and (c) intervention and control groups. To this end, we conducted multiple group invariance tests by testing models where all paths were freely estimated to multiple group models in which structural paths were constrained to be equal across groups. We then calculated the change in the CFI for the constrained and unconstrained models, following recommendations by Cheung and Rensvold's (2002) suggesting that changes below 0.01 are trivial in studies using large samples (greater than 300). The changes in CFI were negligible across all three tests: males and females (0.002), youth living with both biological parents or not (0.002) and intervention and control groups (0.000). Thus, the overall model was considered to be a valid representation of the data for the full sample.

5. Discussion

Recent work within the cognitive contextual framework found diminished self-efficacy to be a critical link between threat appraisals of interparental conflict and negative adjustment during adolescence (Fosco & Feinberg, 2015). Despite improved understanding of the mechanisms by which interparental conflict contributes to negative outcomes during adolescence, insufficient research has examined how adolescents' broader ecological contexts may interact with threat appraisals of interparental conflict to influence such outcomes. This study contributes to existing research by considering adolescents' threat appraisals of interparental conflict within the context of their experiences at school and with peers. We evaluated two competing hypotheses for how success in these contexts could contribute to general self-efficacy beliefs above and beyond the effects of threat appraisals of interparental conflict. In the *additive effects model*, we hypothesized that school success and supportive peer relationships would directly promote increased self-efficacy, effectively compensating for the negative influence of threat appraisals of interparental conflict. In the *context-buffering effect model*, we hypothesized that school success and peer support would moderate the association between threat appraisals and self-efficacy, buffering the effects of threat appraisals of interparental conflict on self-efficacy.

Consistent with prior research, we found associations between interparental conflict and adolescent threat appraisals (e.g., Fosco & Grych, 2008; Gerard et al., 2005), as well as threat appraisals and diminished self-efficacy (Fosco & Feinberg, 2015). Replicating these

findings contributes support to the developmental cascade model, which highlights diminished self-efficacy during adolescence as a critical link between threat appraisals of interparental conflict and negative adjustment outcomes (Fosco & Feinberg, 2015). We also found that both peer support and school success predicted increased general self-efficacy above and beyond the effects of threat appraisals of interparental conflict, providing support for the *additive effects model*. These findings suggest that although threat appraisals of interparental conflict predict diminished self-efficacy, success in school and peer contexts can compensate for this risk, contributing to positive overall self-efficacy beliefs. However, neither peer support nor school success moderated the association between threat appraisal and self-efficacy, failing to substantiate the *context-buffering effect model* hypothesized in this study. Taken together, these findings suggest that the association between threat and self-efficacy is robust, yet adolescents' experiences in other meaningful settings may help to off-set the harmful effects of sustained perceptions of interparental conflict as threatening.

Consistent with resilience models which emphasize the contribution of strengths and risks across contexts to developmental outcomes (Grych et al., 2015), these findings highlight general self-efficacy during adolescence as a multiply determined construct with experiences across developmentally salient domains contributing to or detracting from a global sense of competence. The need for competence and self-efficacy is a defining characteristic of this developmental period (Bandura, 1997; Erikson, 1963; Laursen & Collins, 2009; Schunk & Meece, 2006). Thus, consideration of how the broader ecology of adolescent development contributes to self-efficacy offers valuable insight into sources of resilience which may be leveraged to promote healthy adolescent development. This study identified risks to self-efficacy development within the family context alongside sources of strength within school and peer contexts, providing important findings for intervention efforts across multiple delivery settings.

5.1. Implications for intervention

Family interventions remain a primary approach for targeting family-based risk for adolescent outcomes. This is particularly true for programs which specifically target interparental conflict (i.e., Cummings, Faircloth, Mitchell, Cummings, & Schermerhorn, 2008). Evidence from efficacy trials of this brief prevention program is promising, with participants experiencing decreased interparental conflict, increased marital satisfaction, and increased child adjustment after four psychoeducational sessions relative to control groups (Cummings et al., 2008). By emphasizing strategies to reduce hostility and anger during interparental conflict while simultaneously promoting emotional support and positive resolution tactics, such prevention programs are likely to support adolescent adjustment by minimizing distressing features of interparental conflict (Cummings & Davies, 2002; Cummings et al., 2008; Siffert & Schwarz, 2011; Zhou & Buehler, 2017).

Although intervening to reduce interparental conflict in families represents an ideal strategy for mitigating adolescent threat appraisals and subsequent developmental maladjustment, family-based prevention programs may encounter challenges in reaching all members of the population who would benefit from the program (Fosco, Bumbarger, Bamberger, & Van Ryzin, 2016). In such cases, school-based prevention programs represent a secondary

approach due to the ability to circumvent obstacles of recruitment and retention by accessing students in a setting in which attendance is consistent. Findings from the current study suggest that experiences within the school and peer settings have the potential to promote positive general self-efficacy. Such findings underline the value of school restructuring and improvement programs (e.g., Felner et al., 2001), as well as assessment instruments designed to identify sources of strength within the school in service of brief intervention planning (i.e., Bowen, Woolley, Richman, & Bowen, 2001). By enhancing aspects of the school experience which promote academic achievement and positive social relationships, these intervention strategies may potentially promote self-efficacy in adolescents from high-risk families who would otherwise be unable to access prevention program opportunities.

5.2. Limitations and future directions

This study had several limitations. First, the sample primarily consisted of white families from rural and small town communities, limiting generalizability. The study emphasizes the role of school and peers in adolescent development, yet it is possible adolescent experiences within these domains may differ based on the settings in which they live, as well as their racial or ethnic background (Shedd, 2015). Future research should examine whether the study findings are similar with urban and racial minority populations.

In the current study, school success was a latent variable consisting of four manifest indicators: self-reported GPA, academic self-regulation, school liking, and global school success. However, other school factors - such as the quality of teacher relationships - may also be positively associated with self-efficacy during adolescence (Federici & Skaalvik, 2014). Future research should examine the role of teachers in promoting general self-efficacy beliefs during adolescence, which could inform school-based interventions and teacher training programs. In addition, consideration of measurement in future studies would call for objective reports of GPA whenever possible (e.g., school records), despite established correlations with self-report measures (Zimmerman et al., 2002).

Of course, there are a host of additional processes and contextual variables that were not accounted for in this study that may also contribute to this theoretical model of risk related to adolescent self-efficacy. Other mediators of interparental conflict may be important, such as self-blame (Fosco & Bray, 2016), emotional insecurity (e.g., Davies & Cummings, 1994), or disrupted sleep (El-Sheikh, Buckhalt, Mark Cummings, & Keller, 2007; Kelly & El-Sheikh, 2013). Additionally, a more complete ecological conceptualization suggests that contexts beyond school and peers may offer additional insight into adolescent developmental risk. For example, neighborhood and local community factors such as cohesion or violence may shape adolescent development (Leventhal & Brooks-Gunn, 2000; Shedd, 2015; Vartanian & Gleason, 1999), or sensitize adolescents to interparental conflict (Fosco et al., 2007). Finally, future work may gain increased precision by focusing on specific aspects of self-efficacy (e.g., academic self-efficacy) rather than global reports, as were used in this study.

6. Conclusion

This study broadened the scope of the cognitive contextual framework by examining peer and school contexts as protective factors on the effects of threat appraisals of interparental conflict on general self-efficacy during adolescence. Success in peer and school domains helps to off-set the negative impact of threat appraisals on self-efficacy development. These findings offer promise to prevention initiatives which seek to foster resilience for adolescents experiencing family-based risk by developing strengths within peer and school contexts.

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Fig. 1.

School and Peer Contextual Factors Additive Effects Model. Note. $^{**}p < .01$, $^*p < .05$.

Model Fit: $\chi^2(404) = 923.59$, $p < .01$; CFI = 0.93; TLI = 0.92; RMSEA = 0.04. Standardized path coefficients presented in model. IPC = Interparental Conflict; Sup = Peer Support; Best Frnd = Best Friend Support; Sch Succ. = School Adjustment Questionnaire; Sch Like = School Liking Scale; Acad S-R = Academic Self-Regulation; GPA = Grade Point Average.

Table 1

Correlations, means, and standard deviations.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Y IPC	–															
2. F IPC	.40**	–														
3. M IPC	.40**	.51**	–													
4. Threat 1	.35**	.29**	.25**	–												
5. Threat 2	.27**	.27**	.23**	.56**	–											
6. Sch Adj 2	-.19**	-.13**	-.13**	-.38**	-.33**	–										
7. Sch Like 2	-.16**	-.05	-.07	-.19**	-.22**	.53**	–									
8. ASR 2	-.23**	-.11*	-.09*	-.23**	-.18**	.62**	.54**	–								
9. Peer Sup 2	-.26**	-.10*	-.10*	-.27**	-.23**	.40**	.39**	.44**	–							
10. BFrnd Sup 2	-.18**	-.07	-.07	-.15**	-.14**	.27**	.34**	.39**	.62**	–						
11. Self Eff 1	-.23**	-.17**	-.14**	-.42**	-.35**	.39**	.27**	.33**	.29**	.17**	–					
12. Self Eff 3	-.21**	-.17**	-.15**	-.37**	-.40**	.39**	.38**	.37**	.36**	.26**	.48**	–				
13. 2-Bio Par	-.09*	-.07	-.01	-.13**	-.13**	.10*	.06	.13**	.11**	.13**	.13**	.16**	–			
14. P Edu	-.01	-.07	-.05	-.20**	-.15**	.13**	.04	.05	.08	.05	.13**	.09*	.12**	–		
15. Fam Inc	-.03	-.11**	-.08*	-.21**	-.14**	.23**	.06	.16**	.12**	.11**	.17**	.19**	.25**	.50**	–	
16. Y Sex	-.04	-.05	-.03	.01	.01	-.16**	-.18**	-.15**	-.19**	-.20**	0.05	-.05	0.05	0.03	0.07	–
Mean	2.44	2.25	2.07	2.24	2.17	0.06	3.83	4.17	4.25	4.32	3.65	3.80	0.67	13.25	6.10	0.50
SD	0.85	0.90	0.91	1.08	1.08	0.83	0.86	0.75	0.60	0.75	0.93	0.88	0.47	2.19	2.63	0.62
N	708	641	759	734	632	514	636	636	637	636	733	628	745	755	702	768

Note.

**
p < .01,

*
p < .05.

Y = Youth; F = Father; M = Mother, IPC = Interparental Conflict; Sch Adj = School Adjustment; Sch Like = School Liking Scale; ASR = Academic Self-Regulation; Peer Sup = Peer Support; Best Frnd = Best Friend Support; Self Eff= Self Efficacy; 2-Bio Par = Two Biological Parent Status; P Edu = Parent Education; Fam Inc = Family Income.