

Youth Reports of Parents' Romantic Relationship Quality: Links to Physical Health

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Objective: Prior work has shown that negative aspects (e.g., conflict) of marriage or marriage-like relationships are associated with poor health of offspring, but much less is known about the effects of positive aspects (e.g., affection) of parental romantic relationships. This study investigated links between conflict and affection within parents' romantic relationships and the health of youth with asthma. **Method:** Eighty youths with asthma aged 10–17 answered daily questions over a 4-day period about conflict and affection within their parents' romantic relationship, as well as their own daily mood, asthma symptoms, and expiratory peak flow. **Results:** Multiple regression analyses revealed that romantic affection—but not conflict—was directly associated with higher expiratory peak flow. Further, there was a significant indirect effect of romantic affection via youth positive affect on lower asthma symptoms. **Conclusion:** These results are the first to our knowledge to demonstrate that youth-reported positive characteristics of parents' romantic relationships are associated with better health among youth with asthma.

Keywords: asthma, marriage, affection, parent–child, positive affect

The family environment influences child health from the earliest years of life. Research demonstrates that family-related stress is associated with an increased risk of physical health problems and mental health disorders across development (Repetti, Taylor, & Seeman, 2002). Exposure to one such stress—parental romantic relationship conflict—can have detrimental effects on children as young as 1- to 2-years-old (Grych, Seid, & Fincham, 1992). Although less studied, positive aspects of family environments (e.g., warmth, affection) are associated with beneficial emotional and behavioral outcomes in children and adolescents (Bradley, Davis, Wingo, Mercer, & Ressler, 2013; Eisenberg et al., 2005), often above and beyond negative aspects of family life; however, the literature regarding the relationship between these positive family characteristics and youth physical health is very limited. This article investigates the effects of youth-reported positive and

negative aspects of a key family relationship—parents' romantic relationship—on the health of youth with asthma.

Researchers have long investigated the impact of conflict between romantic partners on the psychological and physical well-being of offspring (Repetti et al., 2002). In recent years, however, researchers have shifted their focus toward understanding the positive characteristics that shape family relationships (Kim-Spoon, Haskett, Longo, & Nice, 2012; Tobin et al., 2015b). Such research is necessitated by the fact that romantic relationship conflict does not indicate the absence of positive features in the relationship per se (Christensen & Walczynski, 1997). One such feature is romantic affection, which can be relayed through both verbal behaviors and nonverbal ones (e.g., hugging, kissing), and thus especially likely to be noticed by children. Similar to research pointing to family cohesion and enmeshment as separate constructs (Barber & Buehler, 1996), but also positive and negative affect as distinct processes (Pressman & Cohen, 2005), examining both marital conflict and affection allows for a comprehensive understanding of their unique contributions to youth health.

Past research has suggested that affection between couple members plays an important role in the development and maintenance of marital relationships (Bell, Daly, & Gonzalez, 1987). Positive marital characteristics, in turn, can beneficially influence youth in daily life. For example, a recent study demonstrated an association between greater support within the parents' marital relationship and lower levels of behavioral problems in children (Goldberg & Carlson, 2014), while another study showed that children who recognized trust between their parents were less likely to be depressed (Oshima, 2013). Further, parent and youth reports of

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greater marital affection have been linked with decreased parent-child conflict (Fauchier & Margolin, 2004), demonstrating the potential for spreading of positive aspects of parents' romantic relationships to the broader family environment.

Surprisingly, there has been very limited research on the effects of positive romantic characteristics on youth physical health. Prior studies have found that romantic couples themselves physically benefit from positive relationship characteristics, with strong associations between individuals' happiness in marriage and physical health (Robles, Slatcher, Trombello, & McGinn, 2014). Recently, it was shown that positive romantic relationship characteristics longitudinally predict "healthier" stress hormone profiles (i.e., steeper diurnal cortisol slopes), above and beyond negative relationship characteristics (Slatcher, Selcuk, & Ong, 2015). Positive aspects of parents' romantic relationships may also directly affect youth health outcomes; however, virtually no studies have examined such associations. Prior work has linked greater stress and lower support from the marital relationship with undesirable health outcomes, such as higher cortisol reactivity in infants (Luecken et al., 2013) and more advanced pubertal development in daughters (Saxbe & Repetti, 2009). Alternatively, parent reports of higher levels of marital functioning were associated with lower bedtime cortisol levels and steeper ("healthier") cortisol slopes in kindergarten-aged children (Pendry & Adam, 2007). Previous research has focused exclusively on broad distal markers of health (i.e., cortisol production, pubertal development). To our knowledge, no studies have investigated the effects of positive and negative aspects of parents' romantic relationships (e.g., affect and conflict) on proximal measures of physical health in at-risk populations such as youth with asthma.

While the marital conflict literature has shown robust links to child health, most studies have examined conflict through parent-reported measures. Examining both marital conflict and affection from children's vantage points is crucial to understanding its impact on them (Grych et al., 1992). Studies utilizing parent-reports may underestimate the effects of conflict because children may overhear arguments and be indirectly exposed to the conflict without their parents' knowledge (Grych et al., 1992). On the other hand, it is possible that using parent-reports may overestimate the child's exposure to marital conflict—and underestimate a child's exposure to marital affection—because parents and children recognize and process marital interactions from their own vantage points. Additionally, an encounter that a parent perceives as conflictual or affectionate with one's partner may not be recognized by one's child. Further, youth may not perceive parental arguments as stressful events because they do not realize that the arguments are conflicts.

The current study draws on daily youth reports of conflict and affection in parents' romantic relationships and their links to physical health in an especially vulnerable population: Youth with asthma. Asthma is a complex, multifactorial, chronic illness with both genetic and environmental contributors (Wood et al., 2008). It impacts over six million children and adolescents in the United States and is the leading cause of hospitalization during youth (Akinbami & the Centers for Disease Control and Prevention National Center for Health Statistics, 2006; Center for Disease Control & Prevention, 2011). The literature has linked many negative psychosocial factors at the family level to greater asthma morbidity, including family conflict (Tobin et al., 2015a), marital

strain (Northey, Griffin, & Krainz, 1998), and psychological stress (Marin, Chen, Munch, & Miller, 2009). Given the evidence that points to detrimental effects of negative family characteristics, it is important for researchers to identify positive aspects of family life that may serve as resource factors or mitigate asthma exacerbations. Emerging work points to beneficial relationships between maternal responsiveness and warmth with asthma-related immune processes (Chen, Miller, Kobor, & Cole, 2011; Tobin et al., 2015b). A more comprehensive approach that assesses parental romantic relationships from the youth perspective may provide more insights into the influence of the family environment on asthma morbidity. We expected that daily youth reports of conflict in parents' romantic relationships would be associated with indicators of asthma morbidity, including greater asthma symptoms and lower peak flow, whereas daily reports of parents' romantic affection would be associated with lower asthma symptoms and higher peak flow. Assessing asthma pathogenesis from daily and nightly asthma symptom reports, in addition to lung function, allows for a multimethod approach that can identify whether the links between parent romantic relationships and youth asthma are limited to shorter time periods during the day or persist to time periods when not in the presence of one's parent (e.g., at night).

Rarely have studies investigated the potential psychological pathways through which parents' romantic relationships impact child health. However, psychological processes—particularly affective ones—figure prominently in theoretical models that link family social environments to child health (Repetti et al., 2002), with child negative affect being inversely associated with parental marital quality and physical health (Ballard, Cummings, & Larkin, 1993; Cummings, Zahn-Waxler, & Radke-Yarrow, 1981) and child positive affect being positively associated with physical health (Friedman et al., 1993). The goals of the current study were to examine the relationship between parental romantic relationship affection and conflict with youth asthma pathogenesis (Aim 1) and determine if youth affect serves as a mechanistic link of the relationship between romantic relationship qualities and youth health (Aim 2). We hypothesized that parents' romantic relationship conflict and affection would impact youth health, at least in part, through their impact on youth positive and negative affect.

Method

Participants

One hundred ninety-four youth with asthma, aged 10 to 17, and their primary caregiver (referred to as "parent" through the rest of the article) took part in the current study as part of the first wave of data collection for the Asthma in the Lives of Families Today (ALOFT) study, a larger longitudinal project examining the associations between family environments and youth asthma. As the current study focuses on aspects of parents' romantic relationships from the youth perspective, only the data from those participants whose (a) parent reported being in a romantic relationship for at least the past 6 months, and (b) who completed daily diary measures were included. Seventy-five youth had parents who were not in a romantic relationship and, among the remaining 119 youth, 39 reported neither daily parental romantic relationship affection nor daily parental romantic relationship conflict (i.e., the items were left blank), leaving a final total sample of 80 youth. Although there

was a larger percentage of non-White individuals in the larger sample compared with the sample used in the analyses, $\chi^2(1) = 9.4, p = .002$, no other differences between the two subsamples emerged in any other demographic variables (lowest $p = .19$). The mean age for the 80 youth participants at baseline visit was 12.78 years ($SD = 1.91$). Asthma diagnosis was confirmed through review of youth's medical record; 34.1% of youth were diagnosed with severe asthma, 27.3% with moderate to severe asthma, 9% with moderate or mild to moderate asthma, and 29.5% with mild intermittent or mild persistent asthma. Of the parents, 63.7% identified as African American/Black, 33.8% as Caucasian, 1.3% as Asian, and 1.3% Multiracial/Other. Demographic information can be found in Table 1.

Additional data regarding parent romantic relationships were collected via youth and parent report. Of the 80 youth participants in the current sample, 50 participants reported that their parents were married and living together, 18 participants reported their parents were not married and living together, and 12 participants reported their parents were not living together. Of the 12 youth with parents not living together, eight reported living with their mother only, three with their mother and step-father, and one with their mother and their mother's romantic partner. From the eight youth living with their mother only, these youth reported their parent being in a romantic relationship that lasted longer than 6 months during a lab-based semistructured interview. Parents also reported the length of their current romantic relationship, which ranged from 1.42 years to 33.25 years ($M = 17.12, SD = 7.03$).

Procedures

The institutional review board at Wayne State University approved the research project. Participants were recruited through the Allergy, Immunology, and Rheumatology Clinic at Children's Hospital of Michigan, local hospitals, Metro-Detroit area schools through notices and a staff research nurse. Interested families called the laboratory and were informed that researchers were studying the links between daily life and asthma in children. An initial screening process was conducted through phone interview to determine eligibility to participate in the study. Children between ages 10 and 17 with a clinical diagnosis of asthma were eligible. Children with a diagnosis of a medical condition related

to immune-system impediment (e.g., chemotherapy, pregnancy, radiotherapy in the past year), a diagnosis of a chronic condition other than asthma (e.g., cardiovascular disease, endocrine disorders), or currently taking oral steroid medications were excluded from the study.

At the initial baseline visit, the parent and youth provided consent and written assent, respectively. Research assistants provided a detailed explanation of the study components and instructions for data collection, including daily diaries and peak flow meters, over a 4-day period. Within the daily diaries, youth were instructed to complete the parental romantic relationship items for the parent in the study whom they live with and that parent's romantic partner. After completing the 4-day diary period, families returned the completed materials to the lab or during a home visit. Both youth and parent participants were compensated for their time.

Measures

Daily diaries. Youth participants completed daily diaries in the evening before going to sleep and sleep diaries (assessing overnight asthma symptoms) upon wake-up. Daily diaries completed before bedtime included ratings of daily parental romantic relationship conflict and affection, positive and negative mood, and asthma symptoms.

Parents' romantic relationship conflict. Two items from the Child Home Data Questionnaire (Margolin, 1990) were completed each evening to assess parental romantic relationship conflict from the youth perspective. The two items were, "My mom and dad seemed angry with each other today," and "My mom and dad argued today," with greater scores indicating more frequent romantic conflict (1 = *not at all* and 3 = *a lot*). Scores were averaged over the 4-day period ($M = 1.16, SD = 0.34, \alpha = .93$).

Romantic affection. Youth-report of daily parental romantic relationship affection was assessed via one item on the Child Home Data Questionnaire (Margolin, 1990). The item was "My mom and dad kissed or hugged today," with greater scores indicating more affection from the perspective of the youth (1 = *not at all* and 3 = *a lot*). Scores were averaged over the 4-day period ($M = 1.90, SD = 0.74$).

Asthma-related health. Youth health was assessed via daily diary and sleep diary reports of asthma symptoms and peak expiratory flow rate (PEFR) assessments.

The daily diary and sleep diary reports of asthma symptoms asked youth participants to rate asthma symptoms experienced that day or night, respectively, on a 5-point scale with higher scores representing more severe asthma symptoms. The items included: *wheezing, chest tightness, chest pain, shortness of breath/difficulty breathing, and general asthma symptoms*. Items were averaged across the 4-day period to assess youth-reported daytime asthma symptoms ($M = 1.32, SD = 0.37; \alpha = .87$) and nighttime asthma symptoms ($M = 1.20, SD = 0.26, \alpha = .81$).

PEFR assessments were completed by youth participants each morning and night across the 4-day diary period. Youth participants were provided with peak flow meters (AsthmaCheck, Respironics), small hand-held devices that are widely used to measure how much air flows from the lungs. For each morning and evening assessment, youth participants provided three readings in accordance with American Thoracic Society guidelines (1995). Although some PEFR

Table 1
Descriptive Statistics

Variable	<i>M</i> or %	SEM	<i>SD</i>
Female	45.0%	—	—
Non-White	66.3%	—	—
Parent college (at least 1 year)	67.5%	—	—
Two-parent home	90.0%	—	—
Age	12.78	.21	1.91
Height (cm)	157.56	1.31	11.71
Youth-reported parental romantic conflict	1.16	.04	.34
Youth-reported parental romantic affection	1.90	.08	.74
Negative mood	1.27	.03	.29
Positive mood	2.86	.07	.62
Asthma symptoms (day)	1.32	.04	.37
Asthma symptoms (night)	1.20	.03	.26
Peak flow	345.16	10.55	94.35

Note. $N = 80$.

meters used for data collection in home-based research are electronic—thus allowing for the examination of flow volume loops—the ones used in the current study were not. Participants time stamped PEFR logs to confirm that they were adhering to study procedures and using the peak flow meter at the specific times during the day. The highest or “best” of these readings was used in the analyses. The morning and nighttime PEFR were highly correlated, $r = .91, p < .001$. As research has pointed to greater PEFR in the afternoon/evening hours, the nighttime PEFR value was utilized in the current analyses (Smyth, Stone, Hurewitz, & Kaell, 1999). The best evening reading each day was averaged across the 4-days ($M = 345.16, SD = 94.35$).

Daily positive mood. In the daily diary reports, youth were asked to rate how each adjective best described their daily positive mood (1 = *not at all*, 2 = *some of the day*, 3 = *most of the day*, 4 = *all of the day*). Child Daily Diary Mood Scales (Cohen, Doyle, Turner, Alper, & Skoner, 2003) included six items describing aspects of positive mood: lively, happy, at ease, full of energy, cheerful, and calm. Two additional positive mood adjectives were included in the scale: proud and loved (Repetti & Polina, 1994). The mean values for positive mood were aggregated across the 4-day period ($M = 2.86, SD = 0.62, \alpha = .90$).

Daily negative mood. Similar to positive mood, youth were asked to rate how accurately each adjective described their daily negative mood (1 = *not at all*, 2 = *some of the day*, 3 = *most of the day*, 4 = *all of the day*). Child Daily Diary Mood Scales (Cohen et al., 2003) included six items describing aspects of negative mood: sad, mean, unhappy, tense, angry, and worried. To aid in youth comprehension, two negative mood adjectives were modified from the original scale—*hostile* was reworded to *mean*, and *on edge* was reworded to *worried* (Repetti & Polina, 1994). The mean values for negative mood were aggregated across the 4-day daily diary period ($M = 1.27, SD = 0.29, \alpha = .78$).

Covariates. Youth age, gender, height (which correlates strongly with lung capacity), race, and parental education were assessed as potential covariates. Covariates were included in regression analyses based on prior theory and empirical work, as well as if they correlated with the outcome variables in this sample ($p < .10$; Hernán, Hernández-Díaz, Werler, & Mitchell, 2002). To facilitate interpretation, youth race was coded 0 = White and 1 = Non-White.

Statistical analysis. Our sample had a total of 0.63% missing data. The small portion of missing values allowed us to replace missing values using the expectation maximization algorithm, which provides unbiased parameter estimates and improves statistical power of analyses (Enders, 2001; Scheffer, 2002). All variables with missing data were continuous except for one individual who had a missing value for education. Because this algorithm does not allow value replacement for categorical data, mode replacement was used to replace the missing education data point.

Bivariate correlations were conducted to examine the relationships among study variables (see Table 2). Multiple regression analyses were conducted to determine if romantic conflict or affection independently predicted asthma symptoms, peak flow, and mood. Based on the bivariate correlations reported in Table 2, these regression models were run including race as a covariate for analyses concerning night asthma symptoms; age and height as covariates for analyses concerning day asthma symptoms; and, age and height as covariates for analyses concerning peak flow. Analyses predicting mood were run without controlling for covariates. Indirect effect analyses using the bootstrapping approach (Hayes, 2013; Preacher & Hayes, 2008) were run to test for an indirect effect of parents’ romantic relationship conflict (or affection) on asthma symptoms and peak flow via positive and/or negative affect. The same covariates mentioned above were included in the indirect effects analyses. To facilitate interpretation, all continuous variables were standardized, whereas dichotomous variables were coded as 0 and 1 (e.g., 0 = less than one year of college, 1 = one year of college or more). Demographic information can be found in Table 1. SPSS (Version 21) was used for statistical analyses.

Results

Aim 1: Parental Romantic Conflict, Romantic Affection, and Youth Asthma Symptoms

The average number of daily asthma symptoms reported by youth in our sample was 1.3 ($SD = .37$), while the average number of night asthma symptoms reported by youth in our sample was 1.2 ($SD = .26$). The average peak flow was 345.16 ($SD = 94.35$). As

Table 2
Bivariate Correlations Among Study Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Female	1	.061	-.016	-.201 [†]	.147	.202 [†]	-.188 [†]	-.089	.094	-.035	.150	.028	-.043
2. Non-White		1	-.270*	-.238*	-.284*	-.149	-.006	-.356**	-.015	.049	-.058	.191 [†]	-.153
3. Parent college (at least 1 year)			1	.302**	.003	.039	.102	.314**	.037	.017	.134	-.075	.095
4. Two-parent home				1	.089	-.011	.073	.379**	-.095	-.033	-.019	-.119	.122
5. Age					1	.601**	-.127	.103	.118	-.181	.200 [†]	.115	.653**
6. Height						1	-.097	.073	.059	-.108	.191 [†]	.081	.610**
7. Youth-reported parental romantic conflict							1	-.114	.306**	-.252*	.056	-.017	-.101
8. Youth-reported parental romantic affection								1	-.076	.316**	-.056	-.244*	.287**
9. Negative mood									1	-.366**	.229*	-.040	.044
10. Positive mood										1	-.338**	-.244*	-.042
11. Asthma symptoms (day)											1	.692**	.099
12. Asthma symptoms (night)												1	.131
13. Peak flow													1

[†] $p < .10$. * $p < .05$. ** $p < .01$.

shown in Table 2, youth-reported parental romantic affection was associated with lower nighttime asthma symptoms, $r = -.244$, $p = .029$ and greater peak flow ($r = .287$, $p = .010$). When we controlled for significant covariates, the association between youth-reported romantic affection and nighttime asthma symptoms was slightly reduced ($b = -.202$, 95% CI [-0.436, 0.032], $p = .090$; $b = -.207$, 95% CI [-0.444, 0.030], $p = .086$ after including conflict as an additional covariate, see Table 3), whereas the association between youth-reported romantic affection and peak flow remained significant ($b = .218$, 95% CI [0.064, 0.373], $p = .006$; $b = .219$, 95% CI [0.063, 0.376], $p = .007$ after including conflict as an additional covariate, see Table 4). Youth-reported parental romantic conflict, on the other hand, was not significantly correlated with any indicator of asthma morbidity (lowest $p = .373$).

Aim 2: Indirect Effects via Youth Daily Affect

As shown in Table 2, there was a significant negative association between youth-reported parental romantic conflict and positive mood, $r = -.252$, $p = .024$, while youth-reported romantic affection was related to higher levels of daily positive mood, $r = .316$, $p = .004$. When both affection and conflict were included together in a regression model, both parental romantic affection ($b = .291$, 95% CI [0.080, 0.502], $p = .007$) and conflict ($b = -.219$, 95% CI [-0.430, -0.008], $p = .042$) emerged as significant predictors of positive affect. Negative mood was positively associated with youth-reported romantic conflict, $r = .306$, $p = .006$ but not affection, $r = -.076$, $p = .504$.

Based on the zero-order correlations reported in Table 2, we ran indirect effects models to test whether positive affect explained the links between youth-reported parental romantic affection and nighttime asthma symptoms, daytime asthma symptoms,¹ and peak flow. Further, we tested whether youth-reported romantic conflict was associated with nighttime asthma symptoms, daytime asthma symptoms, and peak flow via positive and negative mood, which were included simultaneously in each indirect effects model.

The bootstrap analyses revealed a significant indirect effect of youth-reported romantic affection via positive affect on nighttime asthma symptoms (95% CI [-0.2750, -0.0110]) and daytime asthma symptoms (95% CI [-0.2637, -0.0127]), but not peak flow (95% CI [-0.0618, 0.0699]). On the other hand, bootstrap analyses revealed a significant indirect effect of youth-reported romantic conflict via reduced positive affect—but not increased negative affect—on nighttime asthma symptoms (95% CI [0.0129, 0.2134])² and daytime asthma symptoms (95% CI [0.0096, 0.2018]), but not peak flow (95% CI [-0.0984, 0.0231]).

Table 3
Multiple Regression Analyses Predicting Night
Asthma Symptoms

Variable	OLS		
	<i>b</i>	<i>SE</i>	95% CI
Non-White	.25	.25	[-.25, .74]
Youth-reported parental romantic affection	-.21	.12	[-.44, .03]
Youth-reported parental romantic conflict	-.04	.11	[-.26, .18]

Note. OLS = Ordinary Least Squares regression.

Table 4
Multiple Regression Analyses Predicting Peak Flow

Variable	OLS		
	<i>b</i>	<i>SE</i>	95% CI
Age	.43	.10	[.23, .62]
Height	.34	.10	[.14, .53]
Youth-reported parental romantic affection	.22	.08	[.06, .38]
Youth-reported parental romantic conflict	.01	.08	[-.15, .17]

Note. OLS = Ordinary Least Squares regression.

In a subsequent set of analyses, we tested whether the indirect effects of romantic affection on health via youth positive affect held when controlling for negative aspects of parents' romantic relationship (i.e., conflict) and youth negative affect. The bootstrap analyses revealed a significant indirect effect, after controlling for conflict and negative affect, of youth-reported romantic affection via positive affect on nighttime asthma symptoms (95% CI [-0.2556, -0.0131]) and daytime asthma symptoms (95% CI [-0.2416, -0.0107]), but not peak flow (95% CI [-0.0551, 0.0641]).³

Discussion

This study investigated the links among youth-reported parental romantic relationship conflict and affection, daily affect, asthma symptoms, and peak flow in youth with asthma. As opposed to prior work that has linked increased family conflict to greater youth-reported asthma symptoms and naturalistically observed wheezing (Tobin et al., 2015a; Northey et al., 1998), the current results demonstrate that youth-reported parental romantic affection, but not conflict, was associated with greater daily peak flow and reduced asthma symptoms. Furthermore, there was a significant indirect effect of romantic affection via youth positive affect on lower asthma symptoms. These results indicate that positive aspects of marital and marriage-like relationships are associated with improved youth health in terms of both physiological assessments (peak flow) and self-reported symptoms.

To our knowledge, this study is the first to show links between youth perceptions of positive aspects of parents' romantic relationships and better asthma-related health in youth. In particular, positive marital characteristics remain an understudied area of research. These findings are provocative in that youth perceptions of romantic affection were better predictors of both physical health outcomes and mood than were youth perceptions of conflict (although the links among romantic conflict, health, and mood were all in the expected direction). The beneficial associations between

¹ Daytime asthma symptoms were included because indirect effects can exist even in the absence of a significant total effect between youth-reported marital affection and day asthma symptoms (Zhao, Lynch, & Chen, 2010).

² Despite the fact that this pathway was significant, the 95% CI for the total indirect effects model was not significant 95% CI [-0.0821, 0.1541].

³ In a separate analysis, we saved the unstandardized residuals of a multiple regression where peak flow was regressed on age, height, and race. Our original findings regarding peak flow did not change when this variable was used (instead of the raw peak flow variable) as the dependent variable.

parental romantic relationships, youth expressed affect, and youth health could be explained by a number of potential psychosocial mechanisms. Given the work pointing to more consistent family routines and better asthma outcomes among youth (Schreier & Chen, 2010), it is possible that parental romantic relationships that are more affectionate are more consistent and reliable in their parenting strategies leading to better quality parent-child relationships, consistent family routines, and better adherence to medication regimens.

Notable is the indirect link of these positive parental romantic relationship behaviors to youth health via youth positive affect. As prior theories have pointed to spillover effects from negative interactions within parental romantic relationships to child adjustment (Margolin, Gordis, & Oliver, 2004), this current work points to a relationship between positive parental romantic relationship behaviors and youth positive affect. Investigators have posited that positive affect can influence health in many different ways, including improving health behaviors (Smith & Baum, 2003) or promoting resilience and endurance (Salovey, Rothman, Detweiler, & Steward, 2000). This work, coupled with prior research pointing to a strong relationship between positive affect and improved health outcomes in adults (Pressman & Cohen, 2005), raises the question of whether the beneficial effects of positive affect found in adulthood are due to an accumulation of effects across the life span.

It is possible that the nonsignificant effects of conflict were in part due to low statistical power to detect small effects. Another reason may be that on average, relatively low levels of conflict were reported over the 4-day period. These findings should be replicated in future research where participants are followed over longer periods of time (i.e., over 1 to 2 weeks or more). Another possible reason for the null results of romantic conflict could be that some youth did not perceive romantic conflict in the home, despite its occurrence. Our measures asked youth whether their parents "argued" or "were angry" with each other. Youth may not have picked up on more complex behaviors such as passive aggressiveness and, thus, did not perceive their parents being "angry" with each other when in reality they were (cf. Grych et al., 1992). It is also possible that youth were detecting romantic conflict but simply not as affected by it as much as they were by the impact of seeing their parents being affectionate with one another.

The study has limitations worth noting. A main limitation is the relatively small sample size, which was partially due to the relatively few number of two-parent families in the larger project sample. Recent research has found that 28% of children currently live in a single-parent home (U.S. Census Bureau, 2013) and up to 50% of children will spend at least part of their childhood in a single-parent household (Andersson, 2004; Heuveline, Timberlake, & Furstenberg, 2003); this is especially true in low-socioeconomic status urban centers such as Detroit. A notable strength of this sample is the inclusion of a large number of African American families, which often are underrepresented in studies of links between family relationships and health. Although this sample is not widely generalizable to the entire U.S. population, this study is fairly unique in that it includes children from especially risky family environments who are prone to poor health outcomes across the life span (Repetti et al., 2002).

An additional limitation is that child-reported romantic affection was assessed by a single item in the daily diary, which focused

only on nonverbal affection. While nonverbal affection (e.g., kissing, hugging) is a key aspect of affection that correlates strongly with verbal affection (Floyd & Morman, 1998), positive verbal interactions from the child's perspective were not assessed in this study. A daily verbal affection item such as "My mom and dad said 'I love you' to each other" would help to provide a fuller picture of parents' romantic relationship affection. Additionally, relying on self-report methods for the diaries can also be influenced by a number of third variable factors including motivation, mood states, and social desirability. Another methodological limitation is the cross-sectional design, which restricts our ability to draw definite conclusions about the causal direction between parents' romantic relationship interactions and youth asthma symptoms. Outside factors that were not tested in this study (i.e., third variables) could be influencing levels of parents' romantic relationship conflict and affection, as well as the child's daily mood and asthma symptoms. Further, because of the fairly small sample in this study, there was low power to detect small effects. The associations between parents' romantic relationship quality were in the small to medium effect size range; larger samples would allow greater precision of effect size estimation and greater power to detect small effects. Finally, future replications of this work should consider using electronic PEFR meters, which allow for the examination of flow volume loops in order to assess participant effort during PEFR assessments.

However, despite these limitations, this study has a number of notable methodological strengths, including the use of youth reports of parents' relationship interactions, daily diary assessments over multiple days, and the incorporation of subjective and objective assessments of asthma-related health. Future research with larger samples would benefit from comparing gender and age groups within the 10- to 17-year-old range. Young people's interpretations and appraisals of parental relationship discord are undoubtedly dynamic processes that unfold over time. For instance, a longitudinal study examining children's appraisal of marital conflict found that children's appraisal of threat quickly declined from childhood to adolescence and less rapidly during adolescence, while self-blame showed little change over time. On average, boys also felt more self-blame than girls, and gender moderated the effects of exposure to marital conflict and threat (Richmond & Stocker, 2007). We are continuing to follow the current sample longitudinally, and future waves of data collection will allow us to examine how parents' relationship conflict and affection impact changes in youth asthma outcomes over time.

The findings from this study point to the importance of clarifying the impact of both positive and negative aspects of family relationships on youth health. Affection in the parent-child relationship is an obvious target for future work, as there are bidirectional effects within relationships in the family system (Minuchin, 1988). Studies have shown evidence for both conflict and affection transcending marital and parent-child relationships within families (Margolin, Gordis, & Oliver, 2004). Notably, a longitudinal study found that fathers who are happier in their marriages showed more affection to their children and mothers' who rated higher levels of marital satisfaction felt greater joy with their children (Barry & Kochanska, 2010). The mechanisms of how these subsystems influence each other remain unclear. One theory is that an individual's characteristics and psychopathology pave the way for similar behavior and emotions across relationships; in other words,

one person can set the affective atmosphere of several family relationships (Cowan, Cowan, Heming, & Miller, 1991). Future research may help clinicians focus on areas of family relationships that are potential targets for change and most responsible for youth health outcomes.

In conclusion, this study provides preliminary evidence for the effects of youth-reported daily positive parental romantic interactions on affective and physical health outcomes in youth with asthma. Assessing daily parental romantic conflict and affection from the youth's perspective is one of the major strengths of this study. If these results are replicated in larger samples, there are potential clinical implications of this work such that fostering positive aspects of parental romantic relationships—specifically affection—may not only protect parents' own psychological and physical health but also extend to children in the family. This study adds to the literature highlighting the importance of family environments throughout youth development and is novel in extending research on positive facets of family relationships from the parent-child relationship/child health link to the parental romantic relationship/child health link. We believe that this is an area ripe for more research on how positive aspects of parents' relationships may filter down through the family to beneficially impact child health and well being.

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