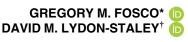# Implications of Family Cohesion and Conflict for Adolescent Mood and Well-Being: Examining Within- and Between-Family Processes on a Daily Timescale

GREGORY M. FOSCO* (iD)
DAVID M. LYDON-STALEY[†] (iD)

Family-level conflict and cohesion are well-established predictors of adolescent mental health. However, traditional approaches focusing on between-family differences in cohesion and conflict may overlook daily intrafamily variability that might provide important new information. We used data from a 21-day daily diary protocol in a sample of 151 caregivers (95.3% female) and their adolescent child (61.5% female) in two-caregiver families to test whether daily changes in family functioning are associated with daily changes in adolescent well-being and whether adolescent well-being depends on average levels of family functioning. We examined family cohesion and conflict in relation to adolescent angry, depressed, and anxious mood, as well as happiness, life satisfaction, and meaning and purpose in life in multilevel models. Both cohesion and conflict exhibited meaningful daily variation. Adolescent-reported cohesion and conflict had unique within-family associations with all six adolescent outcomes. Models using parent reports of family functioning yielded fewer associations than models with adolescent reports; however, several findings remained. Cross-level interactions indicated that within-family variations in cohesion were only associated with adolescent depression in families with lower average levels of cohesion across days. In sum, this study provides compelling evidence that families exhibit meaningful variability from day to day and that daily variation has important implications for adolescent well-being.

Keywords: Family Cohesion; Family Conflict; Daily Diary; Adolescent Well-Being; Within-Family Processes

Fam Proc 59:1672–1689, 2020

*Edna Bennett Pierce Prevention Research Center, Human Development and Family Studies, The Pennsylvania State University, State College, PA.

[†]Department of Bioengineering, University of Pennsylvania, Philadelphia, PA.

Correspondence concerning this article should be addressed to Gregory M. Fosco, Human Development and Family Studies, 306 BioBehavioral Health Building, The Pennsylvania State University, University Park, PA 16802. E-mail: gmf19@psu.edu

Family cohesion and conflict are well-established indicators of family health that have robust implications for adolescent social, emotional, and behavioral adjustment. Family cohesion is marked by strong emotional bonds and feelings of closeness, support, caring, and affection (Moos & Moos, 1994; Olson, Waldvogel, & Schlieff, 2019). Adolescents in cohesive families are less likely to develop internalizing or externalizing problems (Deng et al., 2006; Lucia & Breslau, 2006). Family conflict—anger, hostility, criticism, and tension in the family (Fosco, Caruthers, & Dishion, 2012; Moos & Moos, 1994)—is a risk factor for both internalizing and externalizing problems (Benson & Buehler, 2012; Formoso et al., 2000). Moreover, developmental declines in cohesion or increases in conflict during early adolescence place adolescents at risk for depression, antisocial behavior, and substance use (Fosco, Van Ryzin, Connell, & Stormshak, 2016; Fosco, Van Ryzin, Stormshak, & Dishion, 2014; McKeown, Garrison, & Jackson, 1997; Rajesh, Diamond, Spitz, & Wilkinson, 2015). Turning to positive indicators of well-being (beyond psychopathology), adolescents in more cohesive families exhibit higher levels of subjective well-being (Fosco et al., 2012) and experience more meaning and purpose in life (Lightsey & Sweeney, 2008). Family conflict is implicated in diminished adolescents' well-being (DuRant, Cadenhead, Pendergrast, Slavens, & Linder, 1994; Shek, 1998). We focus on family models of risk and protective factors for adolescent well-being that have provided robust evidence that has led to family cohesion and conflict serving as staples of family assessment and intervention (Moos & Moos, 1994; Olson et al., 2019).

In this study, we disentangle dispositional qualities (conceptually similar to traits) from daily variability (conceptually similar to states) of the family to improve our understanding of the role of family cohesion and conflict in adolescent mental health. *Dispositional family functioning* refers to relatively stable qualities of a family reflected in its tendency to be cohesive or conflictual (e.g., Hamaker, Nesselroade, & Molenaar, 2007). These dispositional features are reflected as individual differences in family functioning, are considered time-invariant, and can be calculated as an individual's central tendency in functioning over a series of measurements (Hamaker et al., 2007; Nesselroade, 1991). Past work, focusing on between-family, global assessments of family-level functioning and adolescent outcomes most closely align with a dispositional conceptualization of the family. Indeed, such work has been foundational in the development of important clinical assessments of family functioning that guide interventions (Moos & Moos, 1994; Olson et al., 2019). However, this dispositional focus overlooks how within-family variability may also be important for adolescent mental health.

Daily variability refers to relatively rapid changes in a family, relative to its own central tendency or dispositional functioning. There is much to be gained by studying daily, within-family variability. First, it informs our understanding of what a "cohesive" or "conflictual" family looks like. Do these labels describe a stable family context, or does it change from day to day? Indeed, there is good reason to believe that the family context is quite dynamic, changing much more rapidly than is captured in global assessments, and it is important to understand how these dynamic processes unfold within the family (Smyth & Heron, 2014). By understanding these family processes, we are better able to assess and intervene effectively. Second, within-family methods illuminate how daily occurrences or changes in a family are associated with change in adolescent well-being (Fuligni, 2014). It is easy to imagine that even families with high dispositional cohesion have "good days" and "bad days" in which they are more or less cohesive than usual. Indeed, days with elevated levels of conflict may be stressful and challenging for adolescents to cope with; likewise, adolescents also may be distressed on days of low cohesion when they may experience diminished support or nurturance (Repetti et al., 2002). Third, within-family methods offer more direct guidance to intervention work relative to between-family methods because they capture processes as they unfold within families on a daily timescale,

telling us what to expect when facilitating a change in family relationships—such as promoting cohesion in families—for adolescent mood and well-being. Without capturing within-family processes, we must rely on assumptions of ergodicity to guide interventions using from between-family studies, assumptions that are rarely met (Hamaker, 2012; Molenaar, 2004).

Preliminary support for the importance of daily family variability for adolescent mental health is found in daily diary studies of family conflict. Both chronic and episodic family conflict can be impactful on adolescents' emotional distress (Chung, Flook, & Fuligni, 2009). Related studies focusing on interparental conflict indicate that it ebbs and flows across days; on days when it is high, youth exhibit poorer well-being (Cummings, Goekemorey, & Papp, 2003; Fosco & Lydon-Staley, 2017). Other work documents daily variability in parent–adolescent relationship quality (Brinberg, Fosco, & Ram, 2017) and parent–child closeness (Bai, Reynolds, Robles, & Repetti, 2017). Indeed, variability may be a key characteristic of family life, calling for explicit study of the implications of variability in family conflict and cohesion.

THE CURRENT STUDY

Guided by family risk and protective factor models highlighting family cohesion and conflict as key family indicators of health (Moos & Moos, 1994; Olson et al., 2019), this study evaluated both dispositional family functioning and daily variability in cohesion and conflict to understand their implications for adolescent daily mood and well-being (Bolger & Laurenceau, 2013). Of particular novelty to this study is the application of within-family methods to family-level functioning. In doing so, it is possible to zoom in on family process, as it unfolds on a daily timescale (Hamaker, 2012). In distressed families, recurring days of conflict and deficient nurturance are stressful, and over time are thought to erode youth's self-regulatory functioning (Repetti et al., 2002). In healthy families, experiences of warm, positive relations can promote resilience by building regulatory strengths (Bai & Repetti, 2015). Daily experiences of warm, close relationships may elicit positive mood, which may mitigate the impact of stressful events, promote prosociality, and reduce risk for psychopathology in vulnerable youth (Bai & Repetti, 2015). Moreover, adolescent's positive mood elicits more warm, supportive behaviors from parents (Flook, 2011). Empirical tests of these theoretical propositions can guide interventionists working with families in their daily life. Thus, we pursued questions about characterizing daily variability in family functioning and the implications for adolescent mood and well-being.

First, we evaluated whether families exhibited meaningful within-family variability in cohesion and conflict across days. Prior work documents reliable within-family variability in family conflict (Timmons & Margolin, 2015). However, to our knowledge, family cohesion has not yet been subjected to daily assessments, and thus, the degree to which family cohesion may fluctuate from day to day is unclear. We hypothesized that cohesion would exhibit reliable within-family variability across days. We then addressed two research questions:

RQ1: Does Daily Variability in Family Cohesion and Conflict Predict Variation in Adolescents' Daily Mood and Well-being?

We evaluated the implications of *dispositional family* functioning and *daily family variability* for adolescent mood and well-being. Prior work documents that, on days when family conflict occurs, adolescents experience more depressed mood (Chung, Flook, & Fuligni, 2011). This study extends this work by (a) including anger and positive well-being outcomes to gain a more complete assessment of adolescent daily well-being (Howell et al.,

2016) and (b) incorporating daily family cohesion in our models to provide a more complete picture of daily family life (Repetti et al., 2002). We hypothesized that adolescents in families with higher dispositional conflict would experience more negative mood and less positive well-being on average. Adolescents in families with higher dispositional cohesion were expected to report lower average negative mood and higher average positive well-being. Regarding daily variability hypotheses, we expected to see within-family covariation among variability in family functioning and adolescent mood. Specifically, we expected that on days with higher cohesion than usual, adolescents would experience decreases in negative mood and increases in positive well-being. We expected that on more conflictual days, adolescents would experience increases in negative mood and decreases in positive well-being. Because of the difficulty translating from existing between-family research to within-family processes (Hamaker, 2012), we did not formulate specific hypotheses in relation to particular adolescent outcomes.

RQ2: Do Dispositional Qualities of the Family Shape the Degree to Which Daily Variation in Cohesion and Conflict Correspond to Adolescent Mood and Well-being?

It may be the case that the salience of daily variability in family relationships may be tempered by the overall family disposition. A recent study using the same sample found that the degree of variability in parent-adolescent relationship quality was tempered by general relationship quality when predicting long-term antisocial behavior and substance use (Fosco & LoBraico, 2019; Fosco et al., 2019). Applying this notion to family-level functioning, in families that have generally high cohesion, daily variation in cohesion might be less strongly associated with adolescents' mood and well-being. Likewise, adolescents in families with low usual levels of conflict may find the occasional instance of family conflict to be less distressing. We tested dispositional family functioning as a moderator of the within-family associations tested in RQ1.

METHOD

The Penn State Family Life Optimizing Well-being (FLOW) study employed a daily diary design in which parents and their adolescent children completed up to 21 daily reports about family functioning, their feelings, and well-being.

Participants

Participants were 151 parent–adolescent dyads from families of 9th- and 10th-grade adolescents recruited through high schools in Pennsylvania. Families were eligible for participation if they met six criteria: (1) two-caregiver family status, (2) adolescents lived in one household continuously, (3) Internet access and means to complete daily surveys at home, (4) English fluency, (5) the adolescent was in 9th or 10th grade, and (6) the parent and adolescent both agreed to participate. Participating adolescents (61.6% female) were between the ages of 13 and 16 years (M = 14.60, SD = 0.83) and identified (via parent report) as White (83.4%), African American/Black (4.6%), Native American/American Indian (0.7%), Asian (4.6%), Hispanic/Latino (0.7%), Multiracial (5.3%), and missing information (0.7%). Participating caregivers (95.3% female) were between 30 and 61 years old (M = 43.4, SD = 6.9), identified as their adolescent's mother (92.72%), stepmother (1.30%), aunt (0.7%), foster mother (0.7), or father (4.6%); and as White (90.1%), African American/Black (2.6%), Asian (3.3%), Native American/American Indian (0.7%), Hispanic/Latino (0.7%), Multiracial (2.0%), and missing information (0.7%). The majority reported being married (88.7%), living with a significant other (6.0%), while some indicated being

single (4.0%) or separated (0.7%) but were living with another caregiving adult. Parents reported living together for an average of 18 years (SD = 7.2). Households had from 1 to 7 children (M = 2.3, SD = 1.2). Parents' education spanned college degree or higher (51.0%), associate's degree or >one year college (30.5%), high school degree or similar (15.2%), less than a high school degree (2.7%), or missing information (0.7%). Family income ranged from "$20,000–29,999" to "$125,000 and over" (*Median* = "$70,000–$79,999").

Procedure

Families were recruited through emails sent to parents from school principals and through family referrals. Interested parents accessed a study web page to learn about the purpose and design of the study, complete eligibility questions, provide consent, and provide contact information. Adolescents in eligible families were contacted to obtain assent for participation and complete a baseline questionnaire. Parents were then emailed a link to their own baseline questionnaire. Upon receipt of both baseline surveys, person-specific links to daily questionnaires were sent each night at 7:00 PM for 21 consecutive days (using Qualtrics Survey Software; www.Qualtrics.com), followed by a phone call or text message reminder. Parents and adolescents were instructed to complete the daily survey before going to bed. However, if needed, surveys could be completed until 9:00 AM the next morning, with instructions to report on the prior day. For all surveys, parents and adolescents were instructed to complete surveys independently, to allow each other privacy in completing surveys, and that their responses would be kept private by our team. Daily questionnaires took approximately 5 minutes to complete. The N = 151 families analyzed here provided daily reports on between 10 and 21 days (M_{Parent} = 20.27 (96.52%), SD_{Parent} = 1.28; $M_{\text{Adolescent}}$ = 19.00 (90.48%), $SD_{\text{Adolescent}}$ = 2.52). Parents and adolescents were compensated with gift cards to Amazon.com or Wal-Mart (based on preference) at each stage: $25 each after completing the baseline assessment and up to $25 per week based on completion. For this portion of the study, families were compensated up to $200.

Measures

Our empirical analysis makes use of parents' and adolescents' daily reports about *family cohesion* and *family conflict* and adolescents' daily reports of *daily mood* and *well-being.* All items were rated on a slider scaled 0 ("Not at All") to 10 ("A Lot") in 0.1 increments. When possible, daily measures were evaluated to determine whether they exhibited reliable within-person variability (R_C; Bolger & Laurenceau, 2013) and between-person reliability, accounting for repeated measures (R_{1F}; Cranford et al., 2006), reported in Table 1.

Family cohesion

Parents and adolescents responded to three items each day, selected from the short version of the Family Environment Scale (Bloom, 1985) based on fit with a daily timescale, "Family members really helped and supported one another," "There was a feeling of togetherness in our family," and "Family members really backed each other up." Daily *family cohesion* scores, calculated separately for parent and adolescent as the average of items, ranged from 0 to 10 for parents (M = 7.80, SD = 2.20) and adolescents (M = 7.87, SD = 2.41).

Family conflict

Parents and adolescents each rated two family conflict items each day, drawn from the shortened Family Environment Scale (Bloom, 1985), "Family members criticized one another," and "Family members fought." Daily *family conflict* scores, calculated separately

TABLE 1
Descriptive Statistics of Family Cohesion, Family Conflict, and Adolescent Mood and Well-Being

| | Mean | SD | R_c | R_{1F} | Proportion of Variance | | Correlations (Within-family Below Diagonal, Between-family Above Diagonal) | | | | | | | |
					Within (1-ICC)	Btwn (ICC)	1	2	3	4	5	6	7	8
1 Family Cohesion (A)	7.87	2.41	.76	.92	.28	.72	—	-.61	-.49	-.29	-.47	.72	.68	.73
2 Family Conflict (A)	1.45	2.26	.70	.78	.48	.52	.39	—	.61	.49	.72	-.49	-.44	-.43
3 Depressed Mood (A)	1.14	2.18	.81	.86	.45	.55	-.17	.17	—	.84	.83	-.69	-.63	-.57
4 Anxious Mood (A)	1.24	2.19	.75	.85	.39	.61	-.13	.16	.52	—	.76	-.52	-.49	-.41
5 Angry Mood (A)	1.63	2.21	.72	.78	.49	.51	-.29	.32	.46	.39	—	-.59	-.50	-.45
6 Positive Mood (A)	8.08	2.28	.80	.87	.42	.58	.29	-.18	-.47	-.33	-.40	—	.89	.89
7 Life Satisfaction (A)	8.24	2.41	—	—	.35	.65	.29	-.19	-.47	-.33	-.36	.63	—	.93
8 Meaning/Purpose (A)	8.08	2.64	—	—	.31	.69	.28	-.15	-.40	-.28	-.29	.54	.63	—
1 Family Cohesion (P)	7.80	2.20	.83	.88	.43	.57	—	-.52	-.35	-.29	-.46	.76	.72	.73
2 Family Conflict (P)	1.32	2.01	.70	.83	.69	.31	-.37	—	.44	.50	.71	-.42	-.37	-.37
3 Depressed Mood (P)	1.01	1.88	.83	.83	.55	.45	-.20	.21	—	.77	.68	-.57	-.52	-.52
4 Anxious Mood (P)	1.25	1.88	.52	.71	.47	.53	-.11	.13	.40	—	.69	-.52	-.48	-.47
5 Angry Mood (P)	1.56	2.09	.78	.75	.60	.40	-.25	.36	.46	.34	—	-.58	-.52	-.50
6 Positive Mood (P)	7.55	2.36	.80	.88	.39	.61	.37	-.26	-.49	-.35	-.52	—	.93	.91
7 Life Satisfaction (P)	8.00	2.38	—	—	.41	.59	.34	-.25	-.42	-.31	-.42	.65	—	.97
8 Meaning/Purpose (P)	7.94	2.36	—	—	.40	.60	.36	-.23	-.35	-.28	-.33	.58	.72	—

Note. (A) Indicates adolescent report, (P) indicates parent report; all variables ranged from 0 to 10. R_c refers to reliable change scores (Bolger & Laurenceau, 2013). R_{1F} refers to between-person reliability, accounting for repeated measures (Cranford et al., 2006). Proportion of variance was derived from the intraclass correlations (ICC); Btwn = between-family variance (ICC value), Within refers to the proportion of total variance attributed to within-family variance (1-ICC). Correlation matrices present within-family correlations (Bakdash & Marusich, 2017) below the diagonal and between-family correlations above the diagonal.

for parent and adolescent as the average of items, ranged from 0 to 10 for parents ($M = 1.32$, $SD = 2.01$) and adolescents ($M = 1.45$, $SD = 2.26$).

To aid in comparisons with prior work focusing on individual differences in family-level cohesion and conflict, we examined correlations of individual mean scores in family cohesion and conflict across days to our baseline measures of family cohesion and conflict, using Bloom's (1985) short form of the Family Environment Scale (Moos & Moos, 1994). The average daily cohesion was highly correlated with baseline measures for adolescents ($r = .68$, $p < .001$) and parents ($r = .71$, $p < .001$). Likewise, average daily conflict was highly correlated with baseline measures for adolescents ($r = .69$, $p < .001$) and parents ($r = .50$, $p < .001$).

Adolescent daily mood

Adolescent daily depressed, anxious, angry, and positive mood was assessed with 8 items selected from the Profile of Mood States-Adolescent version (POMS-A; Curran et al., 1995). Adolescents responded to two items each for depressed mood (i.e., DEPRESSED, SAD, or BLUE), anxious mood (i.e., WORRIED, SCARED), angry mood (i.e., ANGRY, ANNOYED), and positive mood (i.e., HAPPY, CONTENT). Items were selected based on high construct factor loadings (Terry, Lane, & Fogarty, 2003) and to capture one high- and low-intensity emotion in that construct. The two items were averaged to create a single indicator for angry ($M = 1.65$, $SD = 2.22$), depressed ($M = 1.14$, $SD = 2.17$), anxious ($M = 1.25$, $SD = 2.19$), and positive mood ($M = 8.09$, $SD = 2.27$).

Daily well-being

A *life satisfaction* item was adapted from the Satisfaction With Life Survey (Diener, Emmons, Larsen, & Griffin, 1985) for daily use: "All things considered, I was SATISFIED WITH MY LIFE today" ($M = 8.24$, $SD = 2.42$). A second item, "I led a PURPOSEFUL and MEANINGFUL life today" ($M = 8.07$, $SD = 2.65$) was adapted from the Flourishing Scale for daily use (Diener et al., 2010).

Statistical Analysis

As a preliminary step, we evaluated whether there is meaningful within-family variation in family conflict and cohesion on a daily timescale in two steps. We calculated reliable change scores (R_c) to determine whether our measures of daily family cohesion and conflict reliably detect within-family change (Bolger & Laurenceau, 2013). Then, we computed intraclass correlations (ICCs) for the daily variables to identify the proportion of between-family and within-family variance in cohesion and conflict. Larger ICC values indicate a higher proportion of total variance at the between-family level. For ease of interpretation, we also provide values reflecting within-family variation (1-ICC); typical daily diary studies with meaningful within-family variation fall between .2 and .4 (Bolger & Laurenceau, 2013).

We then used multilevel models to evaluate hypotheses in RQ1 and RQ2. Multilevel models are uniquely suited to accommodate the nested nature of the intensive repeated measures (21 days nested within persons; Snidjers & Bokser, 2012). In order to examine both within-family and between-family associations among family functioning and adolescent mood and well-being, cohesion and conflict were parameterized to create time-invariant (between-family, dispositional) and time-varying (within-family, daily variability) versions of the family variables (see Bolger & Laurenceau, 2013). Thus, between-family variables, which we refer to as *dispositional family conflict* and *dispositional family cohesion*, were calculated as the grand-mean centered individual mean score of each variable across 21 days. Positive values indicated higher average levels and negative values

indicated lower average levels, relative to other families in the sample. Within-family conflict and cohesion variables were effectively transformed into a daily deviation score from the family's dispositional score. As such, positive values on the within-family, daily variability variables indicated days when a family experienced higher levels of conflict or cohesion than usual, negative values indicated less conflict or cohesion than usual, and a zero indicated days when a family experienced their usual levels of conflict or cohesion.

We conducted two sets of six multilevel models to evaluate the within- and between-family effects of family cohesion and conflict on adolescent reports of their depressed mood, anxious mood, angry mood, positive mood, life satisfaction, and meaning and purpose in life (each outcome modeled separately). The first set of six multilevel models used adolescent reports of family functioning and parent reports of parent mood as predictors. The second set repeated this approach, but substituted parent reports of family functioning. These models were built following the same process, described below.

At level 1 (day-level variables), the equation was constructed as:

$$\text{Depressed Mood}_{it} = \beta_{0i} + \beta_{1i}\text{Day's Cohesion}_{it} + \beta_{2i}\text{Day's Conflict}_{it} \\ + \beta_{3i}\text{Day's Parent Mood}_{it} + \beta_{4i}\text{Time}_{it} + e_{it} \tag{1}$$

where $\text{Depressed Mood}_{it}$ reflects depressed mood for person i on day t; β_{0i} indicates the expected *depressed mood* in the middle of the study (time was centered at day 10.5) for an individual experiencing an average level of cohesion, conflict, and parent mood for that person; β_{1i} indicates the association between day's cohesion and depressed mood; β_{2i} indicates the association between day's conflict and depressed mood, and β_{3i} indicates the association between parents' mood and adolescent's mood (parent mood variables were selected to correspond with adolescent mood outcomes) to control for parents' mood in these models; β_{4i} indicates the effect of time in study on depressed mood in order to account for time as a third variable (see Bolger & Laurenceau, 2013). Finally, e_{it} are day-specific residuals that were allowed to autocorrelate (AR1).

Person-specific intercepts and associations from the Level 1 model were specified at Level 2 (family-level variables) as:

$$\beta_{0i} = \gamma_{00} + \gamma_{01}\text{Disp. Cohes.}_i + \gamma_{02}\text{Disp. Con}_i + \gamma_{03}\text{Disp. P.Mood}_i + \gamma_{04}\text{Sex}_i + u_{0i} \tag{2a}$$

$$\beta_{1i} = \gamma_{10} + \gamma_{11}\text{Disp. Cohes.}_i + u_{1i} \tag{2b}$$

$$\beta_{2i} = \gamma_{20} + \gamma_{21}\text{Disp. Conflict}_i + u_{2i} \tag{2c}$$

$$\beta_{3i} = \gamma_{30} \tag{2d}$$

$$\beta_{4i} = \gamma_{40} \tag{2e}$$

where the γs are sample-level parameters and the μs are residual between-family differences that may be correlated, but are uncorrelated with e_{it}. As shown in Equations (2a)–(2c), between family associations for dispositional cohesion and conflict with outcomes are indicated by γ_{01} and γ_{02}, respectively, and parent dispositional mood with outcomes is indicated by γ_{03}. Finally, the association between adolescent sex and depressed mood is indicated by γ_{04}.

Cross-level interactions were calculated to address RQ2. Depicted above, we evaluated whether dispositional cohesion qualified the association between day's cohesion and the outcome (Equation 2b; γ_{11}), and whether dispositional conflict moderated the association between day's conflict and the outcome (Equation 2c; γ_{21}). Models were run first with both cross-level interaction terms included; to arrive at a final model, nonsignificant interactions were dropped to allow for interpretation of main effects. Significant interactions were followed up using the Johnson–Neyman technique as generalized to the multilevel case (Bauer & Curran, 2005; Johnson & Neyman, 1936) using software available online

(www.quantpsy.org/interact/hlm2.htm). The Johnson-Neyman technique provides information that is not available within the more common simple slopes approach. In particular, the approach we use estimates the range of values of the moderator over which the within-person association is significantly positive, nonsignificant, or significantly negative. To facilitate interpretation of the intercept as levels of depressed mood for the average person, adolescent sex was sample-mean centered. Analyses were conducted using the nlme package in R version 3.3.3 (Pinheiro et al., 2015) using maximum likelihood estimation. The number of days completed by participants (survey compliance) was significantly associated with the mean-reported adolescent depression ($r = -.25$), anxiety ($r = -.24$), anger ($r = -.38$), and positive affect ($r = .23$), but not with any other variables used in analyses (all $ps > .05$). Thus, we reran analyses and included the number of days available as a covariate and the pattern of results did not change. We report the original models in favor of parsimony.

RESULTS

Descriptive statistics, R_cs, and ICCs are presented in Table 1. Data from 2,285 days, nested within 151 families, were analyzed. Families generally were high in cohesion ($M = 7.80–7.87$, Range 0–10) and low in family conflict ($M = 1.32–1.45$, Range 0–10). Correlations were in the expected direction and statistically significant. Family conflict and cohesion both exhibited reliable within-family change by both parent (.70, .83) and adolescent (.70, .76) report as indicated by R_cs. ICCs revealed that a substantial portion of variance was attributable to within-family variability, ranging from 0.28 (adolescent-reported cohesion) to 0.69 (parent-reported conflict). In sum, these analyses point to meaningful variation across days (Bolger & Laurenceau, 2013).

The first models, evaluating adolescent-reported family functioning, are presented in Table 2. Family cohesion exhibited different effects at different levels. At the between-family level (γ_{01}), dispositional family cohesion was associated with all three indicators of positive well-being, but was not associated with depressed, anxious, or angry mood. Specifically, adolescents in families with higher average cohesion reported feeling more positive mood, more satisfied with life, and more meaning and purpose in life. However, at the within-family level, day's cohesion (γ_{10}) was associated with all six outcomes. On days when family cohesion was higher than usual, adolescents felt less depressed, anxious, and angry; and they had higher positive mood, life satisfaction, and meaning and purpose in life.

Two cross-level interactions (γ_{11}) emerged for day's*dispositional cohesion in relation to adolescent depressed mood (Figure 1a) and life satisfaction (Figure 1b). In both cases, region of significance analysis indicated that at high values of dispositional cohesion, daily variability was not associated with outcomes; effects were present for depression at values of .43 or lower, and for life satisfaction at values of 1.99 or lower (recall that dispositional cohesion was grand-mean centered). Daily variability in cohesion was associated with adolescents' depressed mood in families with low (-1 SD; $b = -.19$, $p < .01$) and average ($b = -.09$, $p < .05$) dispositional cohesion, but not at high dispositional cohesion ($+1SD$; $b = .00, p > .05$). A similar pattern emerged in predicting life satisfaction. Daily variability in cohesion was associated with life satisfaction for adolescents in families with low (-1 SD; $b = .33$, $p < .001$) and average ($b = .22$, $p < .001$) dispositional cohesion, but not in families with high dispositional cohesion ($+1$ SD; $b = .11$, $p > .05$). Illustrative plots are presented in Figure 1a,b.

Family conflict also was associated with adolescent mood and well-being, even when controlling for cohesion. At the between-family level (γ_{02}), adolescents in families that were higher in average conflict reported higher levels of average depressed, anxious, and

TABLE 2

Results of the Multilevel Models Examining Adolescent-Reported Family Cohesion and Conflict for Adolescent Mood and Well-Being

	Depressed Mood	Anxious Mood	Angry Mood	Positive Mood	Life Satisfaction	Meaning and Purpose
	Est (SE)	*Est (SE)*	*Est (SE)*	*Est (SE)*	*Est (SE)*	*Est (SE)*
Intercept (γ_{00})	1.22** (0.10)	1.31** (0.11)	1.74** (0.09)	8.02** (0.10)	8.20** (0.11)	8.04** (0.12)
Level 1—Daily family variability						
Day's Cohesion (γ_{10})	−0.09** (0.03)	−0.07** (0.03)	−0.21** (0.03)	0.27** (0.03)	0.22** (0.04)	0.27** (0.04)
Day's Conflict (γ_{20})	0.09** (0.03)	0.09** (0.03)	0.20** (0.03)	−0.06** (0.02)	−0.08** (0.03)	−0.06 (0.03)
Day's Parent Mood (γ_{30})	0.10** (0.02)	0.12** (0.02)	0.07** (0.02)	0.12** (0.02)	0.06** (0.02)	0.04* (0.02)
Time (γ_{40})	−0.01 (0.01)	−0.01* (0.01)	−0.03** (0.01)	0.00 (0.01)	−0.01 (0.01)	−0.01* (0.01)
Level 2—Dispositional Functioning						
Avg. Cohesion (γ_{01})	−0.10 (0.06)	0.07 (0.07)	0.03 (0.06)	0.47** (0.06)	0.53** (0.07)	0.68** (0.08)
Avg. Conflict (γ_{02})	0.51** (0.08)	0.49** (0.09)	0.68** (0.07)	−0.09 (0.08)	0.02 (0.08)	0.10 (0.09)
Avg. Parent Mood (γ_{03})	0.25** (0.08)	0.41** (0.08)	0.19** (0.07)	0.23** (0.06)	0.38** (0.06)	0.36** (0.07)
Adolescent Sex (γ_{04})	−0.54* (0.21)	−0.57* (0.23)	−0.40 (0.18)	0.46* (0.20)	0.26 (0.22)	0.42 (0.24)
Day's Coh * Usual Coh (γ_{11})	0.05** (0.02)	—	—	—	−0.05** (0.02)	—
Day's Con * Usual Con (γ_{21})	—	—	—	—	—	—

Note. Coh = cohesion; Con = conflict; Est = estimate; SE = standard error; Level 1—Intrafamily Variability reports within-family associations and time across days in the study; Level 2—Dispositional Functioning captures between-family effects and cross-level interactions. $N = 2,285$ days nested in 151 participants. (Parent mood reflects parent's daily or average mood that corresponds to the adolescent outcome [e.g., parent depression when predicting adolescent depressed mood].).
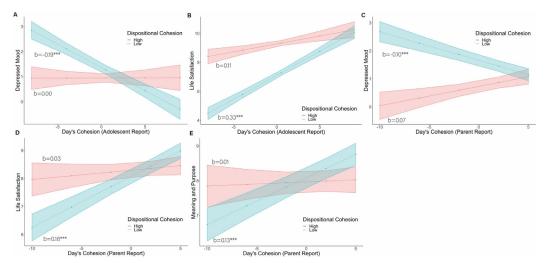
**$p < .01$.

*$p < .05$.

FIGURE 1. Plotting significant cross-level (Day's*Usual) cohesion interactions. The pick-a-point simple slopes of the regression of day's family cohesion (*x*-axis; adolescent report) on (a) depressed mood and (b) life satisfaction, followed by day's family cohesion (*x*-axis; parent report) on (c) depressed mood, (d) life satisfaction, and (e) meaning and purpose, at low (-1 *SD*) and high ($+1$ *SD*) values of usual family cohesion. Unstandardized simple slope coefficients are presented above the plotted lines. Notes: ***p<.001.

angry mood across the 21 days. However, conflict was not associated with any of the three indicators of positive well-being. At the within-family level (γ_{20}), family conflict covaried with all six mental health outcomes. On high-conflict days, adolescents felt more depressed, anxious, and angry than average and felt less happy, satisfied with life, and meaning/purpose in life. No cross-level interactions were found for family conflict.

Parent-reported models

Analyses were repeated using parent reports of family functioning (Table 3). At the between-family level (γ_{01}), parent-reported family cohesion was correlated with all six outcomes. Adolescents in families with higher dispositional cohesion reported lower levels of average depressed, anxious, and angry mood, and higher positive mood, life satisfaction, and meaning and purpose in life. At the within-family level (γ_{10}), cohesion was associated with four of the six outcomes. On days when cohesion was higher than usual, adolescents reported decreased angry mood, and increased positive mood, life satisfaction, and meaning and purpose in life.

Three cross-level interactions (γ_{11}) emerged as statistically significant. Similar to adolescent models, region of significance analysis indicated that day's cohesion was most strongly associated with outcomes in families with lower dispositional cohesion. Region of significance analysis indicated upper values of dispositional cohesion at which day's cohesion was associated with depressed mood ($-.58$ and lower), life satisfaction ($-.72$ and lower), and meaning and purpose in life (.21 and lower). Day's cohesion was only associated with depressed mood at low levels of dispositional cohesion ($-1SD$; $b = -.10$, $p < .05$), but not at high ($+1$ *SD*; $b = .07$, $p > .05$) or average ($b = -.02$, $p < .05$) dispositional cohesion. Day's cohesion was associated with life satisfaction in families with average ($b = .11$, $p < .05$) or low (-1 *SD*; $b = .18$, $p < .05$) dispositional cohesion, but not at high dispositional cohesion ($+1$ *SD*; $b = .03$, $p > .05$). Finally, day's cohesion was associated with meaning and purpose in life in families with average ($b = .07$, $p < .05$) or low

TABLE 3
Results of the Multilevel Models Examining Parent-Reported Family Cohesion and Conflict for Adolescent Mood and Well-Being

	Depressed Mood	Anxious Mood	Angry Mood	Positive Mood	Life Satisfaction	Meaning and Purpose
	Est (SE)	Est (SE)	Est (SE)	Est (SE)	Est (SE)	Est (SE)
Intercept (γ_{00})	1.21** (0.12)	1.30** (0.13)	1.74** (0.12)	8.02** (0.13)	8.20** (0.13)	8.04** (0.15)
Level 1—Daily Family Variability						
Day's Cohesion (γ_{10})	−0.02 (0.03)	0.01 (0.02)	−0.10** (0.03)	0.05* (0.02)	0.11** (0.03)	0.07* (0.03)
Day's Conflict (γ_{20})	0.04 (0.02)	0.04 (0.02)	0.09** (0.03)	−0.04* (0.02)	−0.03 (0.02)	−0.01 (0.02)
Day's Parent Mood (γ_{30})	0.11** (0.02)	0.14** (0.02)	0.07** (0.02)	0.14** (0.02)	0.07** (0.02)	0.06* (0.02)
Time (γ_{40})	−0.01 (0.01)	−0.01* (0.01)	−0.03** (0.01)	0.01 (0.01)	−0.01 (0.01)	−0.01 (0.01)
Level 2—Dispositional Functioning						
Avg. Cohesion (γ_{01})	−0.28** (0.09)	−0.23** (0.09)	−0.22* (0.08)	0.04 (0.12)	0.07 (0.12)	−0.03 (0.14)
Avg. Conflict (γ_{02})	0.11 (0.12)	−0.01 (0.13)	0.15 (0.14)	0.00 (0.12)	0.14 (0.12)	0.08 (0.14)
Avg. Parent Mood (γ_{03})	0.21* (0.10)	0.40** (0.10)	0.20 (0.12)	0.44** (0.10)	0.60** (0.10)	0.70** (0.12)
Adolescent Sex (γ_{04})	−0.52* (0.25)	−0.64** (0.26)	−0.48 (0.25)	0.63* (0.26)	0.42 (0.27)	0.56 (0.31)
Day's Coh * Usual Coh (γ_{11})	0.05** (0.01)	—	—	—	−0.04* (0.02)	−0.04* (0.02)
Day's Con * Usual Con (γ_{21})	—	—	—	—	—	—

Note. Coh = cohesion; Con = conflict; Est = estimate; SE = standard error. N = 2,285 days nested in 151 participants. (Parent mood reflects parent's daily or average mood that corresponds to the adolescent outcome [e.g., parent depression in the model predicting adolescent depressed mood].)
**$p < .01$.
*$p < .05$.

(-1 SD; $b = .13$, $p < .05$) dispositional cohesion, but not in families with high dispositional cohesion ($+1$ SD; $b = .01$, $p > .05$). Illustrative plots are presented in Figure 1c–e.

Post hoc Analyses: Adolescent Sex Moderation

We evaluated whether adolescent sex moderated the between-family (dispositional cohesion and conflict) and within-family (day's cohesion and conflict) effects on mood. Of the 12 models tested with four interactions (48 statistical tests), one finding emerged: In the adolescent model, the interaction between day's conflict and adolescent sex was significant in relation to positive mood ($b = -.10$, $p = .03$). When probed, findings indicated that on days when family conflict was higher, boys reported decreased positive mood ($b = -.12$, $p < .01$); however, this association was not significant for girls ($b = -.03$, $p > .05$).

DISCUSSION

This study drills deeper into the conceptualization of family functioning by evaluating whether within-family variation in conflict and cohesion was associated with adolescent daily mood and well-being, and whether these within-family findings were qualified by the average levels of family functioning. In a preliminary assessment, across two metrics (R_c and the ICC) and across parent and adolescent reports, our results support the notion that family conflict and cohesion exhibit reliable within-family variability across days. These findings expand traditional conceptualizations of the family by highlighting dynamic qualities of the family that appear to play an important role in understanding adolescent mood and well-being. These findings suggest that standard methods of family assessment may be incomplete by overlooking day-to-day variability in family functioning. Moreover, the presence of meaningful within-family variability cohesion and conflict suggests that they are malleable aspects of family functioning that may be amenable to short-term intervention strategies (e.g., daily activities).

Addressing the central study aims, we evaluated the implications of the observed daily variability in family cohesion and conflict for predicting adolescents' depressed, anxious, angry, and positive mood, as well as life satisfaction and meaning and purpose in life. At the between-family level, our findings were generally consistent with prior work linking family cohesion and conflict with adolescent mental health outcomes (e.g., Formoso et al., 2000; Fosco et al, 2012). Family cohesion was associated with all six outcomes in the adolescent-reported models and was associated with positive well-being (but not depressed, anxious, or angry mood) in models using parent reports of family functioning. These findings suggest that cohesion is a particularly robust correlate of positive well-being (regardless of parent or adolescent report), but that adolescents' reports of cohesion, relative to parent reports, have broader implications for all outcomes.

Analyses of family conflict yielded a different pattern of results than cohesion. Drawing on adolescent reports of conflict, we found that adolescents in more conflictual families were more likely to have higher average levels of depressed, anxious, and angry mood. However, conflict was not associated with any of the positive well-being outcomes. In models using parent-reported conflict, there were no between-family findings, possibly due to the low proportion of variance found at the between-family level in our parent reports of conflict. Taken together, family-level conflict appeared to be more specifically associated with negative mood, while family cohesion appeared to be more broadly correlated with a range of mental health outcomes, similar to prior long-term longitudinal work (Fosco et al., 2012).

At the within-family level, our results point to a consistent, meaningful link between daily variation in family cohesion and conflict with adolescent mood and well-being. In the

models using adolescent reports of family functioning, family cohesion and conflict each had robust and unique effects on all outcomes. On days when adolescents experienced higher cohesion, they reported less depressed, anxious, and angry mood and more positive mood, life satisfaction, and meaning and purpose in life. Four of these six findings were replicated in models using parent-reported cohesion, suggesting robust within-family effects for cohesion.

Dispositional cohesion moderated the within-family findings linking variability in cohesion and adolescent depression, life satisfaction, and meaning and purpose in life. Across these cases, a consistent story emerged: Daily variation in cohesion was most meaningful in families with lower levels of dispositional cohesion; in families with high dispositional levels of cohesion, daily fluctuations were not associated with mood and well-being. This suggests that in families that are generally cohesive, day-to-day variation may be less salient to adolescents' mood. However, daily variation in cohesion was associated with adolescent angry mood and positive mood, regardless of the dispositional qualities of the family. These findings underscore the importance of close, supportive family relationships for adolescent mood and well-being. Turning to theories of family resilience (e.g., Bai & Repetti, 2015), the particularly robust within-family findings for positive mood suggest that variability in family cohesion may be an underlying process promoting long-term resilience. In fostering more positive mood, adolescents may be less likely to form negative appraisals of other stressors (Wachs, 2006), thereby buffering them from other family risk processes (Bai & Repetti, 2015). In addition, other work suggests that positive emotions open one up to better coping by broadening their attention processes, facilitating a wider range of behavioral responses to situations, and build personal resources for future challenges (e.g., Garland et al., 2010). Taken together, our findings and others' converge in support of the value of cohesive family relations for promoting positive mood in the shortterm, with implications for fostering long-term resilience and well-being.

Regarding family conflict, when adolescents provided information on the family, a consistent pattern of risk emerged: On days when conflict was higher, adolescents felt more depressed, anxious, and angry, and felt less positive mood, life satisfaction, and meaning and purpose in life. In models using parent-reported conflict, two findings—for angry and positive mood—were replicated. This difference in findings across parent and adolescent reports of family functioning may point to the importance of adolescents' subjective experiences of family conflict for understanding their mood and well-being. Alternatively, models relying entirely on adolescent reports are vulnerable to mono-informant bias, warranting caution in interpretation.

It is interesting to note that average levels of family conflict did not moderate the within-family associations. Daily experiences of exposure to family conflict were distressing for adolescents, regardless of the average level of conflict in their family. In particular, daily variation in family conflict was most robustly linked with adolescent angry mood. The robust findings for effects of family conflict, regardless of family dispositional levels, lend additional support to postulates of the risky families model (Repetti et al., 2002), in which episodes of conflict may undermine adolescents' regulatory functioning, and, over time, accumulate to erode their mental and physical health. These findings also expand on theory and research on coercion theory, which proposes that repeated experiences with hostile family interactions can shape angry, aggressive behaviors in youth (Patterson et al., 1992). Our findings that episodes of family conflict may evoke adolescent anger may explain long-term findings linking family conflict to symptoms of aggression problems (Fosco et al., 2012). Future work mapping momentary interactions on to a daily timescale would be fruitful for understanding the processes that maintain coercive interactions over time (Fosco & LoBraico, 2018).

Clinical Implications

The current findings emphasize the unique, important implications of cohesion and conflict for adolescent well-being. Our findings point to the value of intensive longitudinal methods for assessing within-family variability in family cohesion and conflict. Such methods would enable assessments to capture dynamic features of family life that may drive psychopathology risk or underpin adolescent resilience. Moreover, family-based interventions should seek to address both conflict and cohesion processes in families, given unique implications of each in our analyses. Thus, intervention programming would have broader impact if it includes content aimed at reducing conflict and promoting effective problem solving skills as well as promoting close, supportive relationships (LoBraico et al., 2019). Further, our findings suggest that family-based interventions should not only seek to change the overall levels of family cohesion (i.e., dispositional cohesion), but also to maximize the frequency of cohesive days. Future work might harness daily diary methods by incorporating them into interventions to provide ongoing monitoring and feedback and track change processes over the course of an intervention to help practitioners evaluate the effectiveness of their work with families.

Although this study did not sample clinically distressed families, evidence from the statistically significant cross-level interactions indicates that daily variation in cohesion was particularly salient for adolescents in families that had low dispositional cohesion. Specifically, the within-family association between day's cohesion and adolescent mood was larger for high-risk families (i.e., low in dispositional cohesion), suggesting that in clinical interventions, targeting daily family cohesion may be particularly fruitful. These results suggest that the present findings are promising for both preventive and clinical interventions, but await replication in samples with clinically distressed families.

Future Directions

We offer several next steps that build on the current findings. First, work is needed that can link within-family processes with distal measures of adjustment to bridge daily time-scale processes with developmental change (e.g., Ram et al., 2014) in adolescent psychopathology risk and positive well-being. Second, studies utilizing measurement burst designs in which daily diary studies are incorporated at every occasion in longitudinal assessment (Nesselroade, 1991) would lend important insights into how within-family variability may change across development and would help identify whether there are developmental periods of particular sensitivity, or whether these processes (e.g., family variability, adolescent reactivity to stressors) remain consistent across development. Third, the current findings suggest that intervention research would benefit from incorporating intensive assessment approaches. Within-family methods generalize to intervention work more readily than between-family methods (Molenaar, 2004) and provide valuable insights into underlying change processes.

Limitations

This study focused on two-caregiver families, used a sample of relatively high-functioning, White, affluent families and may be limited in generalizability. Replication of these results with samples that are more diverse in terms of risk, race, and family structure will be valuable. In addition, this study only includes one caregiver from each family (predominantly mothers); studies assessing both caregivers would provide a better picture of family life. Our sample was not drawn from a clinical population and thus does not reflect pathological levels of family conflict or deficient nurturance. Although within-family findings are likely applicable to clinical samples, it is possible that other changes (e.g., findings for

family conflict) may emerge in the pattern of results when studying distressed families. Finally, our study relied on Internet-deployed surveys to be completed at home. Because we do not have information about the full population sampled from, it is not possible to rule out the possibility that there may be selection effects at work in this study. Daily diary studies collecting one assessment per day are limited in their ability to determine the direction of effects; multiple assessments each day would offer more information.

CONCLUSION

This study supports the view that family-level conflict and cohesion have unique effects on adolescent mood and well-being. Efforts to identify adolescent risk for psychopathology, or diminished flourishing, should consider both conflict and cohesion as indicators of family health. This study provides evidence for between- and within-family effects of both family-level conflict and cohesion, replicating and extending prior work that has focused predominantly on between-family effects. Examination of within-family effects suggests that changing family cohesion and conflict on a daily basis can have important implications for adolescent well-being. Our findings indicate that increases in conflict and decreases in cohesion each represent stressors that adolescents must cope with and hold implications for the development of "real-time" interventions that can deliver strategies or activities that promote positive family functioning on a day-to-day basis to reduce psychopathology risk or promote well-being.

REFERENCES

Bai, S., & Repetti, R. L. (2015). Short-term resilience processes in the family. *Family Relations*, *64*, 108–119.

Bai, S., Reynolds, B. M., Robles, T. F., & Repetti, R. L. (2017). Daily links between school problems and youth perceptions of interactions with parents: A diary study of school-to-home spillover. *Social Development*, *26*, 813–830.

Bauer, D. J., & Curran, P. J. (2005). Probing interactions in fixed and multilevel regression: Inferential and graphical techniques. *Multivariate Behavioral Research*, *40*, 303–329.

Benson, M. J., & Buehler, C. (2012). Family process and peer deviance influences on adolescent aggression: Longitudinal effects across early and middle adolescence. *Child Development*, *83*, 1213–1228.

Bloom, B. L. (1985). A factor analysis of self-reported measures of family functioning. *Family Process*, *24*, 225–239.

Bolger, N., & Laurenceau, J.-P. (2013). *Intensive longitudinal methods: An introduction to diary and experience sampling research*. New York: Guilford Press.

Brinberg, M., Fosco, G. M., & Ram, N. (2017). Examining inter-family differences in intra-family (parent-adolescent) dynamics using grid-sequence analysis. *Journal of Family Psychology*, *31*, 994–1004.

Chung, G. H., Flook, L., & Fuligni, A. J. (2009). Daily family conflict and emotional distress among adolescents from Latin American, Asian, and European backgrounds. *Developmental Psychology*, *45*, 1406–1415.

Chung, G. H., Flook, L., & Fuligni, A. J. (2011). Reciprocal associations between family and peer conflict in adolescents' daily lives. *Child Development*, *82*(5), 1390–1396.

Cranford, J. A., Shrout, P. E., Iida, M., Rafaeli, E., Yip, T., & Bolger, N. (2006). A procedure for evaluating sensitivity to within-person change: Can mood measures in diary studies detect change reliably? *Personality and Social Psychology Bulletin*, *32*, 917–929. https://doi.org/10.1177/0146167206287721.

Cummings, E. M., Goeke-morey, M. C., & Papp, L. M. (2003). Children's responses to everyday marital conflict tactics in the home. *Child Development*, *74*, 1918–1929.

Curran, S. L., Andrykowski, M. A., & Studts, J. L. (1995). Short Form of the Profile of Mood States (POMS-SF): Psychometric information. *Psychological Assessment*, *7*, 80–83.

Deng, S., Lopez, V., Roosa, M. W., Ryu, E., Burrell, G. L., Tein, J. Y. et al. (2006). Family processes mediating the relationship of neighborhood disadvantage to early adolescent internalizing problems. *Journal of Early Adolescence*, *26*, 206–231.

Diener, E., Emmons, R., Larsen, J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, *5*, 164–172.

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., won Choi, D., Oishi, S. et al. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, *97*, 143–156.

DuRant, R. H., Cadenhead, C., Pendergrast, R. A., Slavens, G., & Linder, C. W. (1994). Factors associated with the use of violence among urban Black adolescents. *American Journal of Public Health*, *84*, 612–617.

Flook, L. (2011). Gender differences in adolescents' daily interpersonal events and well-being. *Child Development*, *82*, 454–461.

Formoso, D., Gonzales, N. A., & Aiken, L. S. (2000). Family conflict and children's internalizing and externalizing behavior: Protective factors. *American Journal of Community Psychology*, *28*, 175–199.

Fosco, G. M., Caruthers, A. S., & Dishion, T. J. (2012). A six-year predictive test of adolescent family relationship quality and effortful control pathways to emerging adult social and emotional health. *Journal of Family Psychology*, *26*, 565–575.

Fosco, G. M., & LoBraico, E. J. (2018). A family systems framework for adolescent antisocial behavior: The state of the science and suggestions for the future. In B. H. Feise, M. Celano, K. Deater-Deckard, E. Jouriles, & M. Whisman (Eds.), *APA handbook of contemporary family psychology* (pp. 53–68). Washington, DC: American Psychological Association.

Fosco, G. M., & LoBraico, E. J. (2019). Elaborating on premature adolescent autonomy: Linking variation in daily family processes to developmental risk. *Development and psychopathology*, *31*, 1741–1755.

Fosco, G. M., & Lydon-Staley, D. M. (2017). A within-family examination of interparental conflict, cognitive appraisals, and adolescent mood and well-being. *Child Development*, *190*(4), e421–e436.

Fosco, G. M., Mak, H. W., Ramos, A., LoBraico, E., & Lippold, M. (2019). Exploring the promise of assessing dynamic characteristics of the family for predicting adolescent risk outcomes. *Journal of Child Psychology and Psychiatry*, *60*, 848–856.

Fosco, G. M., Van Ryzin, M. J., Connell, A. M., & Stormshak, E. A. (2016). Preventing adolescent depression with the family check-up: Examining family conflict as a mechanism of change. *Journal of Family Psychology*, *30*, 82–92.

Fosco, G. M., Van Ryzin, M., Stormshak, E. A., & Dishion, T. J. (2014). Putting theory to the test: Examining family context, caregiver motivation, and conflict in the Family Check-Up model. *Development and Psychopathology*, *26*, 1–14.

Fuligni, A. J. (2014). Emerging Methods in Family Research. In S. M. McHale, P. Amato & A. Booth (Eds.), *Emerging methods in family research* (pp. 19–37). Switzerland: Springer International Publishing.

Garland, E. L., Fredrickson, B., Kring, A. M., Johnson, D. P., Meyer, P. S., & Penn, D. L. (2010). Upward spirals of positive emotions counter downward spirals of negativity: Insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clinical Psychology Review*, *30*, 849–864.

Hamaker, E. L. (2012). Why researchers should think "Within-Person". In M. R. Mehl & T. S. Connor (Eds.), *Handbook of research methods for studying daily life* (pp. 43–61). New York: Guilford Press.

Hamaker, E. L., Nesselroade, J. R., & Molenaar, P. C. M. (2007). The integrated trait-state model. *Journal of Research in Personality*, *41*, 295–315.

Howell, K. H., Coffey, J. K., Fosco, G. M., Kracke, K., Katherine Nelson, S., Rothman, E. F. et al. (2016). Seven reasons to invest in well-being. *Psychology of Violence*, *6*, 8–14.

Johnson, P. O., & Neyman, J. (1936). Tests of certain linear hypotheses and their application to some educational problems. *Statistical Research Memoirs*, *1*, 57–93.

Lightsey, O. R., & Sweeney, J. (2008). Meaning in life, emotion-oriented coping, generalized self-efficacy, and family cohesion as predictors of family satisfaction among mothers of children with disabilities. *The Family Journal*, *16*, 212–221.

LoBraico, E. J., Fosco, G. M., Crowley, M. D., Redmond, C., Spoth, R. L., & Feinberg, M. E. (2019). Examining intervention component dosage effects on substance use initiation in the strengthening families program: For parents and youth ages 10–14. *Prevention Science*, *20*, 852–862.

Lucia, V. C., & Breslau, N. (2006). Family cohesion and children's behavior problems: A longitudinal investigation. *Psychiatry Research*, *141*, 141–149.

McKeown, R. E., Garrison, C. Z., & Jackson, K. L. (1997). Family structure and cohesion, and depressive symptoms in adolescents. *Journal of Research on Adolescence*, *7*, 267–281.

Molenaar, P. C. M. (2004). A manifesto on psychology as idiographic science: Bringing the person back into scientific psychology, this time forever. *Measurement: Interdisciplinary Research & Perspective*, *2*, 201–218.

Moos, R. H., & Moos, B. S. (1994). *Family environment scale manual*. Palo Alto, CA: Consulting Psychologists Press.

Nesselroade, J. R. (1991). The warp and woof of the developmental fabric. In R. M. Downs, L. S. Liben, & D. S. Palermo (Eds.), *Visions of aesthetics, the environment, and development: The legacy of Joachim F. Wohlwill* (pp. 213–240). London: Psychology Press.

Olson, D. H., Waldvogel, L., & Schlieff, M. (2019). Circumplex model of marital and family systems: An update. *Journal of Family Theory and Review*, *11*, 199–211.

Patterson, G. R., Reid, J. B., & Dishion, T. J. (1992). *Antisocial boys: A social interactional approach*. Eugene, OR: Castalia Pub Co.

Rajesh, V., Diamond, P. M., Spitz, M. R., & Wilkinson, A. V. (2015). Smoking initiation among Mexican heritage youth and the roles of family cohesion and conflict. *Journal of Adolescent Health*, *57*, 24–30.

Ram, N., Conroy, D. E., Pincus, A. L., Lorek, A., Rebar, A., Roche, M. J. et al. (2014). Examining the interplay of processes across multiple time-scales: Illustration with the Intraindividual Study of Affect, Health, and Interpersonal Behavior (iSAHIB). *Research in Human Development*, *11*, 142–160.

Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: Family social environments and the mental and physical health of offspring. *Psychological Bulletin*, *128*, 330–366.

Shek, D. T. L. (1998). A Longitudinal Study of the Relations Between Parent-Adolescent Conflict and Adolescent Psychological Well-Being. *The Journal of Genetic Psychology*, *159*(1), 53–67. https://doi.org/10.1080/00221329809596134.

Smyth, J. M., & Heron, K. E. (2014). Emerging methods in family research. In S. M. McHale, P. R. Amato, & A. Booth (Eds.), *Emerging methods in family research* (pp. 19–37). New York: Springer.

Snidjers, T. A. B., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*, 2nd ed. New York, NY: Sage.

Terry, P. C., Lane, A. M., & Fogarty, G. J. (2003). Construct validity of the Profile of Mood States – Adolescents for use with adults. *Psychology of Sport and Exercise*, *4*, 125–139.

Timmons, A. C., & Margolin, G. (2015). Family conflict, mood, and adolescents' daily school problems: Moderating roles of internalizing and externalizing symptoms. *Child Development*, *86*(1), 241–258.

Wachs, T. D. (2006). Contributions of temperament to buffering and sensitization processes in children's development. *Annals of the New York Academy of Sciences*, *1094*, 28–39.