

Family Meals Buffer the Daily Emotional Risk Associated With Family Conflict

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Family meals have been associated with positive adolescent outcomes in cross-sectional and longitudinal research. However, it is not known how adolescents experience family meals on a daily basis, and whether family meals buffer stresses associated with interpersonal conflicts on the daily level. To address this gap in the literature, adolescents ($N = 396$, 58% female, $M_{\text{age}} = 14.57$ years) completed diary checklists for up to 14 days, reporting their emotions, experiences of family and peer conflict, and whether they ate with their family that day. On days that adolescents shared a family meal, they felt greater happiness and role fulfillment, and less burnout and distress. Moreover, family conflict was associated with more negative emotionality only on days that adolescents did not also eat with the family. Findings suggest that family meals buffer daily risks associated with familial conflicts. Follow-up analyses suggest that these processes may be particularly important among older adolescents.

Keywords: adolescence, family meal, emotions, family conflict, peer conflict

During busy daily life, meals are often the only time when family members come together to engage, and provide and receive emotional support (Larson, Branscomb, & Wiley, 2006). Perhaps in part because daily family meals represent a stable, routine, and context for emotional connectedness (Goldfarb, Tarver, & Sen, 2014; Jones, 2018), family meals have been associated with many positive outcomes across development. For example, adolescents who more frequently eat with the family are less likely to be overweight or underweight, have substance use problems, and struggle with clinical depression (Fulkerson et al., 2006), and tend to feel more emotionally close to parents and siblings (Fiese et al., 2002) compared with their peers. The benefits associated with family meals also extend beyond the home. Adolescents who more frequently eat with the family tend to exhibit higher academic performance (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004), fewer antisocial behaviors (Fulkerson et al., 2006; Prior & Limbert, 2013; Sen, 2010), and increased social competencies with peers (Fulkerson et al., 2006).

Prior research has been almost entirely cross-sectional, retrospective, or longitudinal, which can only tell us about average meal eating behaviors between adolescents. This work has examined how average family meals at one time point relate to average well-being at another time point (Goldfarb et al., 2014). To extend prior research, it is important to clarify whether family meals are associated with positive or negative emotions on the daily level. Examining temporal relations at the daily level may help us to understand the processes by which family meals promote long-term well-being (Offer, 2013a, 2013b), as has been observed in prior research. For example, if adolescents feel happier on days that they eat with the family, this could partially explain why family meals are associated with later positive social and emotional adaptation.

Family Meals as a Protective Factor Against Interpersonal Conflict

Family meals may translate into greater well-being by protecting against the negative effects of daily stressors, such as conflict in the home. On the daily level, sharing a family meal may mitigate the negative impacts of family conflict by providing an opportunity to make amends, internalize disputes less, engage positively, and recover; thereby, offsetting distress caused by conflict during the day. Supporting this notion, Family Systems Theory and developmental theories of risk and resilience (Broderrick, 1993; Labella & Masten, 2018) have suggested that spending positive time together as a family after experiencing emotional challenges can increase adolescents' feelings of family cohesion and emotional security, and promote resilience (Fiese et al., 2002; Jones, 2018). Consistent with these theories, family meals have been associated with greater emotional well-being among adolescents experiencing ongoing difficult family relationships (Meier & Musick, 2014). Indeed, the experience of coming together as a

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family to share a meal may be more important than the specific meal itself (Larson et al., 2006). However, it remains unclear whether family meals protect against emotional risks on the daily level as well. If family meals reduce the distress that is associated with family conflict the same day, this could represent one daily pathway through which family meals ultimately confer the greater well-being. Moreover, this could reveal a key experience in the home that helps to support adolescents' daily emotional health.

In addition to buffering the negative costs of family conflict, family meals may also protect youth in the face of conflict with peers. Family meals can provide adolescents the opportunity to express difficult feelings, receive emotional support from parents and siblings, and distract from difficult emotions by engaging positively with family (Fiese, Foley, & Spagnola, 2006, 2012; Larson et al., 2006). For example, adolescents whose family members express concern and emotional support during family dinners tend to feel greater trust and belonging in the family, which may foster resiliency even outside the home (Fiese et al., 2006; Larson et al., 2006). Indeed, parents often use meal times to encourage and coach youth through difficult experiences (Larson et al., 2006), and this may include social challenges with peers. Consistent with this notion, a family meal may provide adolescents the opportunity to share their experiences of negative peer interactions or conflict they encountered that day, receive emotional support, encouragement and ideas for how to cope. In this way, family meals may protect adolescents from emotional risk the same day; that is, adolescents may go to bed feeling relatively happier and more fulfilled after having a chance to express their challenges and receive support (Ho et al., 2018).

Adolescence as a Sensitive Developmental Period

Adolescence is an essential developmental period for studying processes related to family meals, interpersonal conflict, and youth adaptation for several reasons. First, adolescents may benefit more from family meals compared with children, if meals help to maintain connection with the family during the adolescent transition toward increased autonomy and participation in activities outside the home with peers (Brannen, 2002). Second, adolescents experience higher levels of daily interpersonal conflicts, which incurs increased emotional risk (Chung, Flook, & Fuligni, 2011; Holmbeck, 2018). In addition, adolescents also become more sensitive to the negative effects of interpersonal conflicts, because they experience hormonal shifts (Romeo, 2013), begin to develop their own social identities that are highly influenced by their interactions with others (Fuligni, 2019) and place increasing importance on relationships with peers (Chung et al., 2011). These shifts may be particularly pronounced in older compared with younger adolescents (Holmbeck, 2018), who spend more of their day away from the family with peers (Brannen, 2002). In light of this, family meals might be even more of a protective factor during later adolescence, compared with earlier adolescence. It is important to understand if the interplay between family meals, conflict, and adjustment varies across adolescent development, as this may reveal key, specific developmental periods during which family meals are more or less beneficial and protective.

Current Study

In the current study, we capitalized on the daily diary method in a large and diverse sample of adolescents. We examined whether family meals and family and peer conflict contribute to adolescents' positive or negative emotions on the daily level, and whether family meals mitigate the emotional risks associated with family and peer conflict. The daily diary method is uniquely useful for examining questions related to adolescents' emotions and daily routines in the home (Telzer & Fuligni, 2009a). Youths' reports of their daily activities, behaviors, and feelings are more reliable and accurate than when these processes are assessed using traditional retrospective accounts from a single questionnaire (Bolger, Davis, & Rafaeli, 2003). Daily diary methods also allow researchers to examine whether specific events that occur on one day are associated with feelings measured the same day. For example, on days that adolescents share a meal with their family, are they more likely to feel happy or distressed? While not causal, data of this nature allow us to test within the same adolescent, whether family meals and positive and negative emotions co-occur with each other on the same day. In this way, we can hold constant the extraneous traits and characteristics of both the individual adolescent and the family. Daily diary methods also enable us to examine interactions between multiple processes that occur on the daily level. For example, does the daily association between interpersonal conflict and emotions depend on whether the adolescent ate a meal with their family that day? Prior literature that has examined links between family meals and adolescent outcomes has used indexes that are averaged across days or retrospective (Goldfarb et al., 2014). More recent studies emphasize the importance of examining family experiences on the daily level, as family routines have been shown to temporally fluctuate with emotions within days (Armstrong-Carter, Ivory, Lin, Muscatell, & Telzer, 2020; Telzer & Fuligni, 2009b). In particular, recent work has revealed significant daily fluctuations in adolescents' *happiness*, *distress*, *burn-out*, and *role fulfillment* (i.e., feeling like a good son, daughter, or sibling), suggesting that these measures of emotions capture distinctive variability across days within adolescents, and are meaningfully related to same-day family experiences. For example, role-fulfillment has been linked to family behaviors with effect sizes twice the size of more commonly measured constructs such as happiness or distress (Armstrong-Carter et al., 2020), indicating that it may be robustly and uniquely related to adolescents' experiences in the home the same day.

Using the daily diary method, we tested the following key questions: (1) Is eating a meal with the family associated with positive or negative emotions the same day? Given the observed associations between family meals and positive developmental outcomes in prior cross-sectional and longitudinal work, we hypothesized that family meals would be associated with more positive emotions (e.g., happiness and role-fulfillment) and fewer negative emotions (e.g., distress and burnout) the same day. We tested multiple positive and negative emotions to both to allow for the possibility that family meals might relate to different measures simultaneously and divergently (e.g., increase happiness but also increase distress, or increase happiness but decrease role-fulfillment) and to be consistent with prior work (Armstrong-Carter et al., 2020; Telzer & Fuligni, 2009a). (2) Are family and peer conflict associated with positive or negative emotions on the

daily level, and does eating a meal with the family buffer (i.e., moderate) this association? Informed by developmental theories of youth risk and resilience, which suggest that positive family experiences can counteract the risks of negative experiences (Labella & Masten, 2018), we hypothesized that family meals would buffer the negative effects of family and peer conflict. (3) Do these associations vary by age across early to late adolescence? Drawing on evidence of increases in daily conflict, emotional risk, and interpersonal sensitivity across adolescence (Holmbeck, 2018), we hypothesized that older adolescents may benefit even more from family meals, compared with younger adolescents. To follow up and provide further evidence of directionality of effects, we conducted additional sensitivity analyses. Specifically, we first controlled for previous day emotions, and then tested potential spill-over into emotions the next day.

Method

Participants

Participants were 396 adolescents (57.92% female) between the ages of 11 and 18 years ($M_{\text{age}} = 14.57$ years, $SD = 1.39$ years). The sample was racially and ethnically diverse: 38.89% identified as non-Hispanic White (from here on referred to as White, $N = 154$), 26.77% Asian ($N = 106$, 13 of whom were mixed [e.g., Asian and White]), 16.67% Hispanic/Latinx ($N = 66$, 11 of whom were mixed [e.g., Hispanic and White]), 10.8% African American ($N = 45$, 9 of whom were mixed [e.g., African American and White]), and 6.31% other race ($N = 27$, 16 of whom self-identified as other and nine were mixed race). Approximately 10% of mothers had less than an 8th grade education, 13% did not complete high school, 24% completed high school, 27% completed postsecondary education (college, trade, or vocational school), and 23% completed graduate school (3% declined to answer). Participants were recruited from the community using convenience sampling, including posting flyers at schools, posting on listservs serving ethnic minority families, recruiting participants from previous studies who agreed to be contacted for other research studies, and word of mouth. Participants were compensated \$10 in total for completing the daily diaries as well as a \$20 bonus if inspection of the data indicated that they had completed all the diaries on time. Participants provided written consent/assent and procedures were approved by the University of Illinois at Urbana-Champaign Committee on Human Subjects (Protocol #13378; *Development of Decision Making and Social Cognition*).

Procedure

Participants were provided with diary checklists; most participants (80%) were provided 14 days of diaries, whereas 20% of participants ($N = 83$) were only provided with 7 days of diaries. Most participants (89.82%) completed all days of their diaries ($M = 93.87\%$ of days, $SD = 15.51\%$ of days, range = 14.29–100%). There were 4,369 total person-day observations (Level 1 reports). Diaries included both weekdays and weekends. The order of days differed between participants depending on the day of the week that they started, but all participants had the same proportion of weekday to weekend data if they completed all of the diaries. Participants chose to complete the diaries either on paper (63.20%)

or via a secure website (36.80%). Participants who responded with paper were given 14 manila envelopes and an electronic time stamper (Dymo Corporation, Stamford, CT), which verified the time that checklists were completed. The time stamper is a small device that imprints the current date and time and is programmed with a security code so that the correct date and time cannot be changed. Participants were instructed to place their completed checklists into an envelope each night and to stamp the seal of the envelope with the time stamper. Participants who completed surveys online were sent an e-mail with the link to each daily diary survey, and the time and date of completion were recorded via the website. The daily diary checklists were three pages long and each took approximately 5–10 min to complete.

Measures

Family meals. Participants indicated on the daily checklist whether or not they ate any meal with their family each day. We chose this broad measure because the process of coming together as a family has been associated with positive outcomes, and the specific meal (i.e., breakfast, lunch, or dinner) may vary by family and day and may be less important (Larson et al., 2006). To allow for the possibility that the structure and timing of family meals vary across different households, we did not specify or define “family meal” any further in the daily checklist. As such, adolescents were able to define family meals for themselves in the context of their own experience. This item yielded a single dichotomous index of family meals, which was coded 0 = no family meal, 1 = family meal.

Daily family conflict. Items on the daily checklist asked participants to indicate whether they had engaged in different behaviors with family members each day. Each item was coded as 0 = no, 1 = yes. Our measure of *Family conflict* was based on family systems theory (Broderick, 1993), general self-report measures of family conflict (e.g., Bloom, 1985), and other daily diary studies (Chung et al., 2011). This was the mean of four items: you argued with a sibling, you got into trouble or were punished by your parents, you argued with a parent, you lied to parent ($R1F = .77$; see Cranford et al., 2006 for more information on this reliability statistic).

Daily peer conflict. Items on the daily checklist asked participants to indicate whether they had engaged in different behaviors with peers each day. Each item was coded as 0 = no, 1 = yes. Our measure of *Peer conflict* was based on social relational theories of adolescent development (Laursen & Collins, 1994), and other self-reported measures of peer conflict (e.g., Marsee et al., 2011) including those from prior daily diary studies (Chung et al., 2011). It was the mean of 11 items: you hit, kicked, or shoved a peer, you threatened, insulted, or made fun of a peer, you said something mean behind a friend’s back, you excluded or left a friend out, you lied to a friend, someone online or in a text message threatened, insulted or made fun of you, you argued with a friend, you argued with a boyfriend or girlfriend, you were excluded or left out by friends, a peer said something mean behind your back, a peer threatened, insulted, or made fun of you, $R1F = .97$. This measure demonstrated acceptable within-person reliability of change ($RC = .71$; Cranford et al., 2006).

Daily emotions. Daily emotions were assessed with items on the daily checklist that were drawn from the Profile of Mood States

(McNair, Lorr, & Droppleman, 1971) and used in prior research (Armstrong-Carter et al., 2020; Telzer & Fuligni, 2009a). Adolescents used a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*) to indicate “the extent to which they felt each emotion that day.” The time of day for each emotion was not specified. *Happiness* was calculated from two items: joyful and happy, RIF = .87. *Distress* was calculated from nine items: sad, hopeless, discouraged, on edge, unable to concentrate, uneasy, nervous, stressed, worried, RIF = .88. *Burnout* was calculated from three items: fatigue, exhausted, and worn-out, RIF = .87. *Role Fulfillment* was calculated from two additional items in the daily diary in which participants responded on a 7-point Likert-scale ranging from 1 (*not at all*) to 7 (*extremely*) to report the extent to which they felt like “a good son or daughter” and “a good brother or sister” that day. Role fulfillment was calculated as the mean of these two items, RIF = .86. Because adolescents answered the daily diaries at the end of the day just before bedtime, family meals occurred before adolescents reported their emotions. All emotion composites demonstrated acceptable within-person reliability of change (RCs = .71–.79). For all daily diary measures (i.e., family and peer conflict, emotions), there was substantial within-person variability (intraclass correlation coefficient, ICC = .43–.79) and between-person variability across the diary days (ICC = .36–.64).

Data Analysis

Our aim was to understand the daily association between eating a meal with the family and positive and negative emotions, and whether family meals buffer emotional reactivity associated with daily interpersonal conflicts. We conducted linear mixed effect models that nested days (Level 1) within participants (Level 2). Fixed effects were tested at the level of participants (i.e., Level 2). This statistical approach accounts for dependency within participants and introduces less bias because of missing data compared with traditional statistical analyses, such as repeated measures analysis of variance (Raudenbush & Bryk, 2002). We person-centered all Level-1 predictors, and we included on the intercept person-mean values for each of our daily predictors (i.e., family meals, family conflict, and peer conflict; Curran & Bauer, 2011).

Model 1 tested family meals and interpersonal conflict (family and peer) as simultaneous Level 1 predictors of each emotional experience the same day. Model 2 additionally included an interaction term that was the product of family meal and each interpersonal conflict variable (i.e., family conflict and peer conflict).

To test potential differences in observed associations by developmental period, Model 3 included an additional three-way interaction term between family meals, adolescent age, and each conflict variable. We conducted additional sensitivity analyses first controlling for prior day emotions and then testing next day emotions as a dependent variable.

To probe significant cross-level interactions, we used the simple slopes technique (Aiken, West, & Reno, 1991) to test the associations between interpersonal conflict and emotions on days when there was or was not a family meal. For three-way interactions, we split adolescents by the mean age for the sample, and plotted two-way interactions within younger and older adolescents. All analyses were conducted using Stata Software (StataSE, Version 15.1.632).

Results

Sample Characteristics

Table 1 displays descriptive statistics for sample constructs for the full sample and by sex and race/ethnicity. On average, adolescents ate a meal with the family on 61% of days. Family meals were most common among Asian youth and least common among Black youth, but did not differ by sex. Girls reported higher peer conflict than boys, but family conflict did not vary by sex.

Bivariate correlations of mean values across days showed that adolescents who ate more frequent family meals were younger, $r = -.09, p < .001$ and experienced more family conflict, $r = .05, p = .002$, and less peer conflict, $r = -.04, p = .001$. Adolescents who experienced more family conflict were younger, $r = -.08, p < .001$, and experienced more peer conflict, $r = .21, p < .001$. There were no other significant correlations across days.

Multilevel analyses at the daily level showed that family meals were not related to family conflict or peer conflict on the daily level ($p > .078$). Family and peer conflict co-occurred on the same days ($B = 0.06, SE = 0.01, p < .000$), consistent with prior research (Chung et al., 2011).

Family Meals Are Associated With More Positive and Fewer Negative Emotions

We first tested whether family meals, family conflict, and peer conflict uniquely predict positive and negative emotions. As

Table 1
Descriptive Statistics for Study Constructs

Study constructs	Full sample		Boys		Girls		Black		Asian		Hispanic		Other		White	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Family meal	0.61	(0.49)	0.62	(0.48) ¹	0.60	(0.49) ¹	0.35	(0.48) ^A	0.74	(0.44) ^B	0.60	(0.49) ^C	0.54	(0.50) ^C	0.59	(0.49) ^C
Family conflict	0.14	(0.20)	0.13	(0.20) ¹	0.14	(0.21) ¹	0.13	(0.19) ^{A,B}	0.14	(0.19) ^{A,B}	0.10	(0.22) ^A	0.16	(0.22) ^B	0.14	(0.21) ^{A,B}
Peer conflict	0.04	(0.10)	0.03	(0.08) ¹	0.04	(0.11) ²	0.07	(0.13) ^A	0.03	(0.07) ^B	0.06	(0.17) ^{A,C}	0.05	(0.10) ^{C,D}	0.04	(0.09) ^D
Happiness	3.25	(1.08)	3.23	(1.07) ¹	3.25	(1.09) ¹	3.07	(1.25) ^{A,D}	3.08	(0.99) ^A	3.35	(1.08) ^{B,C}	3.27	(1.19) ^{C,D}	3.40	(1.06) ^C
Distress	1.65	(0.79)	1.54	(0.65) ¹	1.73	(0.87) ²	1.74	(0.85) ^A	1.60	(0.75) ^B	1.45	(0.99) ^{A,B}	1.68	(0.92) ^{A,B}	1.67	(0.78) ^{A,B}
Burnout	2.09	(1.05)	1.96	(0.95) ¹	2.19	(1.11) ²	2.33	(1.12) ^A	1.90	(0.98) ^B	1.92	(0.99) ^B	2.16	(1.06) ^A	2.20	(1.07) ^A
Role fulfillment	4.87	(1.36)	4.80	(1.35) ¹	4.92	(1.36) ²	5.01	(1.56) ^A	4.56	(1.22) ^B	4.92	(1.48) ^A	5.11	(1.34) ^A	5.02	(1.35) ^A

Note. For sex, means with the same number are not significantly different at the $p < .05$ level. For race, means with the same letter are not significantly different.

shown in Model 1 of Table 2, on days that adolescents ate a meal with the family, they reported significantly greater happiness and role fulfillment ($ps < .001$), and less distress and burnout ($p = .005$ and $p = .010$, respectively). Conversely, on days that adolescents experienced greater family conflict, they reported significantly less happiness and role fulfillment ($p = .001$ and $p < .001$), and more distress and burnout ($p < .001$ and $p < .030$). On days that adolescents experienced greater peer conflict, they reported significantly less happiness ($p < .001$) and more burnout and distress ($ps < .001$).

Family Meals Buffer the Associations Between Family Conflict and Negative Emotions

Our next model tested whether family meals moderates the associations between family and peer conflict and emotions. For family conflict, as shown in Model 2 of Table 2, family meals significantly interacted with family conflict to predict happiness ($p = .003$), burnout ($p = .010$), role fulfillment ($p < .000$), and distress ($p < .030$). As shown in Figures 1 and 2, family conflict was associated with lower levels of happiness and higher levels of burnout only on days when adolescents did not eat a family meal. On days when adolescents ate a family meal, family conflict was not associated with happiness or burnout. Similarly, as shown in Figures 3 and 4, family conflict was associated with lower role fulfillment and higher levels of distress, particularly on days that there was no family meal. Together, these findings suggest that family meals buffer the daily emotional toll of experiencing family conflict.

In addition, family meals significantly interacted with peer conflict to predict role fulfillment ($p = .045$). As shown in Figure 5, peer conflict was associated with marginally lower levels of role fulfillment only on days when adolescents did not eat a family meal. On days when adolescents ate a family meal, peer conflict was not associated with role fulfillment. There were no other significant associations between family meals, peer conflict, and emotions ($ps = .050-.832$).

Sensitivity Analyses

Bonferroni correction. As follow up, we conducted Bonferroni correction for four analyses (four emotion outcomes). Results all retained significance at the $p = .013$ level *except* for the direct positive association between family conflict and burnout, the interaction between family conflict and family meals in predicting burnout, and the interaction between peer conflict and family meals in predicting role fulfillment.

Controlling for frequency of family meals across days. We also tested whether family meals buffered the negative effects of conflict more or less for adolescents who routinely had more or fewer family meals by entering average family meals as a cross level interaction term at Level 2. We found no evidence for this ($p = .150-723$).

Controlling for prior day emotions. To provide further evidence of directionality, we conducted two additional models. First, we examined whether family meals buffered emotional risks associated with family and peer conflict the same day, controlling for emotions the previous day. To do this, we ran the same models as before, but included the same emotion on the previous day. Consistent with our

Table 2
Direct and Interactive Daily Associations Between Family Meals and Family and Peer Conflict Predicting Psychological Experiences

Independent variables	Happiness		Distress		Burnout		Role fulfillment	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Family meal	0.11*** (0.03)	0.16*** (0.03)	-0.05*** (0.02)	-0.08*** (0.02)	-0.06* (0.03)	-0.10** (0.03)	0.23*** (0.03)	0.28*** (0.04)
Family conflict	-0.06*** (0.01)	-0.11*** (0.02)	0.07*** (0.01)	0.10*** (0.02)	0.02 (0.01)	0.07*** (0.02)	-0.23*** (0.02)	-0.33*** (0.02)
Peer conflict	-0.08*** (0.02)	-0.08*** (0.02)	0.11*** (0.01)	0.11*** (0.02)	0.08*** (0.02)	0.08*** (0.02)	-0.00 (0.02)	-0.04† (0.02)
Family meal	0.24† (0.14)	0.24† (0.14)	-0.38*** (0.11)	-0.38*** (0.11)	-0.47*** (0.13)	-0.48*** (0.13)	0.33† (0.19)	0.34† (0.19)
Family conflict	0.12† (0.07)	0.12† (0.07)	0.14* (0.06)	0.14* (0.06)	0.18** (0.06)	0.18** (0.06)	0.07 (0.09)	0.07 (0.09)
Peer conflict	0.04 (0.05)	0.04 (0.05)	0.16** (0.06)	0.16** (0.06)	0.08 (0.05)	0.07 (0.05)	-0.02 (0.07)	-0.02 (0.07)
Meal × Family Conflict		0.09*** (0.03)		-0.05** (0.02)		-0.07** (0.03)		0.12*** (0.03)
Meal × Peer Conflict		-0.01 (0.03)		0.00 (0.02)		-0.01 (0.03)		0.06* (0.03)
Constant	-0.05 (0.09)	-0.09 (0.09)	0.26*** (0.07)	0.28*** (0.07)	-0.79*** (0.09)	-0.76*** (0.09)	-1.36*** (0.13)	-1.39*** (0.13)
Observations	4,035	4,035	3,725	3,725	4,017	4,017	4,001	4,001
Groups	397	397	338	338	397	397	390	390

Note. Standard errors in parentheses.
† $p < .1$. * $p < .05$. ** $p < .01$. *** $p < .001$.

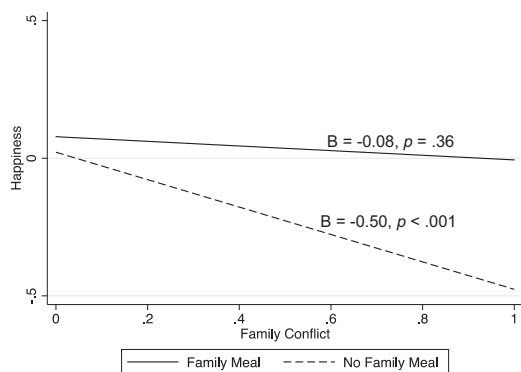


Figure 1. Family meal buffers the daily negative association between family conflict and happiness.

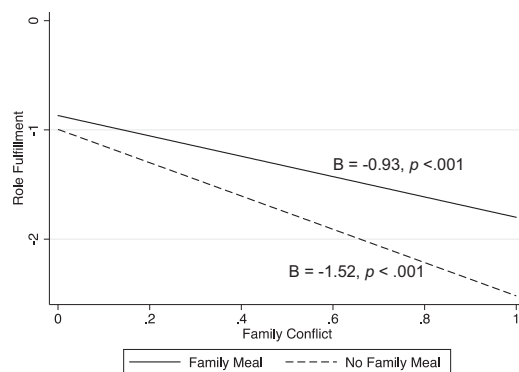


Figure 3. Family meal buffers the daily negative association between family conflict and less role fulfillment.

previous results, we found that family meals significantly buffered the effect of family conflict on happiness ($B = 0.08, SE = 0.03, p = .007$), burnout ($B = -0.06, SE = 0.03, p = .021$), and role fulfillment ($B = 1.43, SE = 0.03, p < .001$). Family meals did not buffer the effect of family conflict on distress ($p = .174$) or the effects of peer conflict on any emotion ($p = .077-.730$). With Bonferroni correction, these results retained significance at the $p = .023$ level *except* for the interaction between family conflict and family meals in predicting burnout above prior day levels.

Spillover into next day emotions. As a second more conservative follow-up analysis, we examined whether family meals buffered negative emotions experienced the day *after* family and peer conflict (i.e., a spillover effect). We again ran the same models but with each next day emotion as the dependent variable, and controlled for that same emotion the same day (i.e., the day of the conflict). Consistent with our same-day results, we found that family meals significantly buffered the effect of family conflict on distress the next day ($B = -0.06, SE = 0.02, p = .002$). Specifically, family conflict was associated with marginally higher levels of distress only on days when adolescents did not eat a family meal ($B = 0.14, SE = 0.08, p = .069$), but significantly lower levels of distress on days when adolescents did eat a family meal ($B = -0.17, SE = 0.07, p = .012$). This result remained significant after Bonferroni correction.

Variation Across Adolescent Years

To investigate whether the observed associations varied across adolescence, our final models added a three-way interaction between family meals, age, and each conflict variable (i.e., family conflict or peer conflict) predicting each emotion. We first added this interaction term to our primary model (same day emotion as the dependent variable) then to our two sensitivity analyses (same day emotion as the dependent variable while controlling for previous day emotion, and next day emotion as the dependent variable while controlling for same day emotion). The associations between family meal, family and peer conflict, and emotions the same day did not vary by adolescent age in either of the two models with same day emotions as the outcomes. However, family meals significantly interacted with family conflict and age to predict distress the next day ($B = -0.06, SE = 0.02, p = .005$). As shown in Figure 6, family conflict spilled over into more distress the day after there was no family meal, but only for older adolescents, and not for younger adolescents. Similarly, family meals significantly interacted with peer conflict and age to predict distress the next day ($B = 0.06, SE = 0.02, p = .010$). As shown in Figure 7, peer conflict spilled over into more distress the day after there was no family meal, but only for younger adolescents, and not for older adolescents.

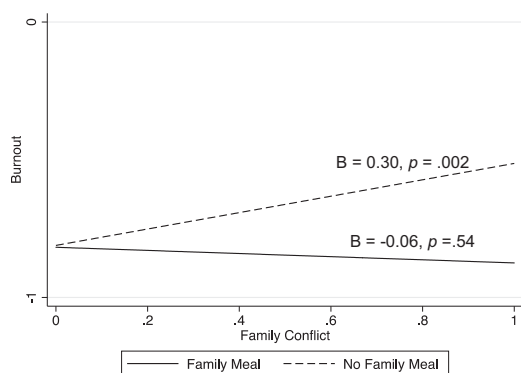


Figure 2. Family meal buffers the daily positive association between family conflict and burnout.

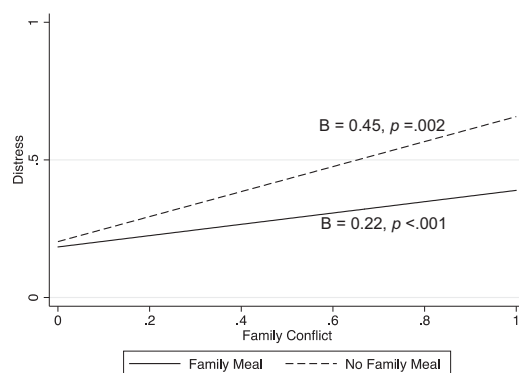


Figure 4. Family meal buffers the daily positive association between family conflict and increased distress.

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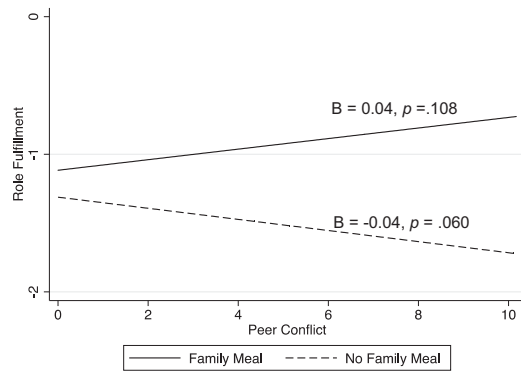


Figure 5. Family meal buffers the daily negative association between peer conflict and role fulfillment.

Discussion

The goal of this study was to understand how family meals are related to adolescents' emotions on the daily level, and whether family meals moderate how family and peer conflict relate to positive and challenging emotions. In a large and diverse sample of adolescents, we investigated these direct and interactive effects. Since family meals might represent an opportunity for adolescents to express themselves and receive emotional support after experiencing challenges during the day, we hypothesized that adolescents would end the day relatively happier and more fulfilled, and less upset after having a family meal. Consistent with this hypothesis, we found that on days that adolescents shared a meal with the family, they reported more positive emotions and fewer negative emotions. Moreover, family meals buffered the negative effects of family conflict on increased negative emotions and decreased positive emotions. These findings suggest that family meals may serve as a daily protective factor against the negative effects of

daily familial disputes. Sensitivity analyses controlling for previous day emotions and examining links with emotions the next day strengthened this interpretation of the direction of this pathway.

Our first key finding was that on days that adolescents shared a meal with the family, they reported greater happiness and role fulfillment, and less burnout and distress, compared with days that they did not eat with the family. These results are consistent with cross-sectional reports that the majority of adolescents retrospectively view family meals as one of their favorite family activities (Zollo, 1995), and evidence that more frequent family meals on average are associated with more optimal physical and mental health (Goldfarb et al., 2014; Jones, 2018). Our study extends this work by demonstrating that the positive associations with family meals are observable on the daily level as well. Moreover, this pattern appears consistent across adolescents, whether they routinely have more or fewer family meals, underscoring that it is not only the overall amount of family meals that is protective (as assessed in prior research), but the temporal co-occurrence within individual adolescents. Daily family meals provide an opportunity to share experiences from the day, enjoy the company of loved-ones, and experience a stable family routine that reminds adolescents of their belonging and trust in the family (Fiese et al., 2006). In particular, family meals may provide more of a context for youth to share their experiences and receive support, compared with family time in other settings which may be more structured around an activity that facilitates less communication (e.g., watching a movie).

A reduction in distress and burnout and an increase in happiness and role fulfillment as a function of eating with the family are meaningful outcomes in and of themselves, as they are key indices of psychological well-being (Telzer & Fuligni, 2009b). Furthermore, these psychological experiences are important because they contribute to a variety of other positive outcomes in youth, ranging from school achievement and school behaviors (Quinn & Duck-

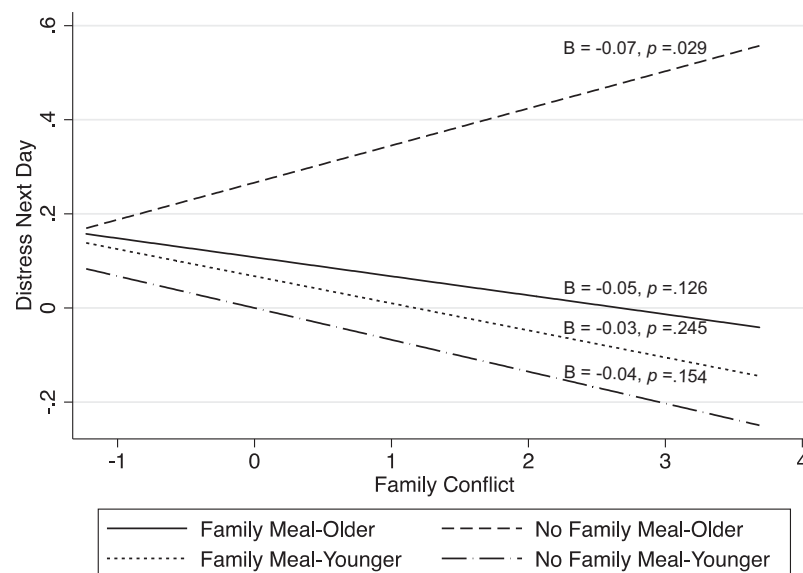


Figure 6. Family meal buffers the association between family conflict and increased distress the next day for adolescents who were older (ages 14.5–18 years), but not younger (ages 12–14.5 years).

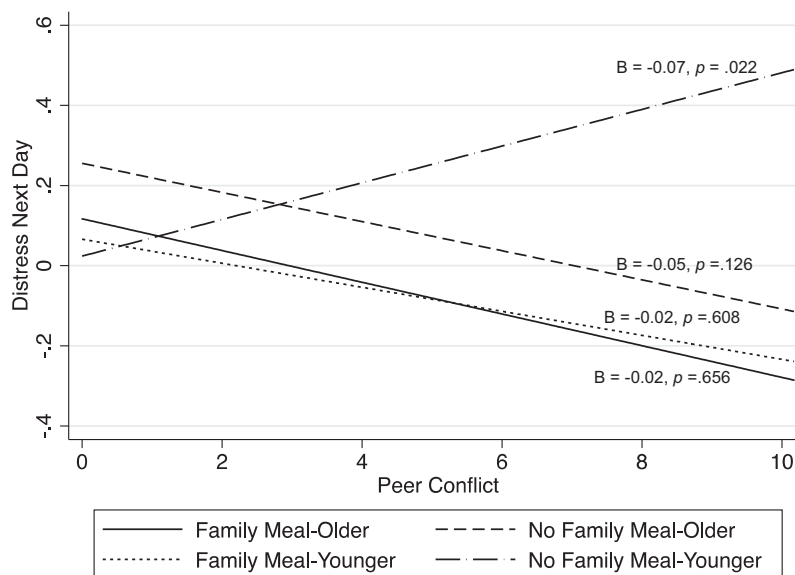


Figure 7. Family meal buffers the association between peer conflict and increased distress the next day for adolescents who were younger (ages 12–14.5 years) but not older (ages 14.5–18 years). We split the two groups by mean age in our sample.

worth, 2007) to physical health, both in the short and long term (Mahon, Yarcheski, & Yarcheski, 2005; Trzesniewski et al., 2006). Thus, the daily links between family meals and increased well-being may also have effects downstream on overall psychological and physical well-being.

Our interactive models revealed that family meals buffered adolescents from the daily emotional risks associated with family conflict. In particular, family conflict was linked with greater distress and burnout, and less happiness and role fulfillment only on days that adolescents did not eat a meal with their family. In contrast, family conflict was not associated with negative emotions on days that adolescents did eat a meal with their family. These results were particularly robust for daily happiness, role fulfillment and distress—compared with burnout, which was no longer significant after correcting for multiple tests.

A shared meal may provide an opportunity to make amends, internalize negative interactions less, engage positively and recover, thereby offsetting the negative impacts of conflict during the day. After experiencing family conflict, adolescents may feel more positive at the end of the day if they also shared family meal, because the meal reminded them consciously or unconsciously that “everything is still okay.” Thus, family meal routines may facilitate feelings of family cohesion, belonging, and emotional security (Fiese et al., 2006) even the same day, which could in turn help to mitigate emotional distress caused by interpersonal conflicts earlier in the day. This finding is consistent with the hypothesis that the routine of consistent family meals provides a sense of familial organization and clear expectations, which are integral for adolescents’ psychological resilience (Larson et al., 2006). This interpretation was also supported by sensitivity analysis which revealed that family meals buffered the negative effects of conflict on emotionality over and above emotions the previous day.

Our investigation of age-related variation revealed that family conflict was associated with higher levels of distress the day after

there was no family meal only for older adolescents, but not for younger adolescents. Older adolescents may benefit more from family meals in part because they had fewer family meals on average in our sample. Older adolescents also tend to have relatively greater independence and are more often outside the home or away from family, interacting with peers (Holmbeck, 2018), so family meals may be the only time when they come together with their family to engage and receive emotional support (Larson et al., 2006). In part because older adolescents have fewer family meals during the week, they may be more inclined to share their experiences and receive emotional support when they do come together to eat with the family. In contrast, younger adolescents may spend more time around the home engaging with parents and siblings during the afternoon after school or on weekends, and receive emotional support during those times. These results are particularly important since late adolescence marks the transition to early adulthood, a time of increasing autonomy and emotional risk that paves the way for lifelong adjustment.

Results revealed one significant interaction with peer conflict, suggesting that peer conflict reduced positive feelings of role fulfillment only when adolescents did not eat a meal with the family. However, this result was no longer significant after correction for multiple testing and should be interpreted with caution. More commonly—and in contrast to family conflict—we found that peer conflict was consistently associated with less happiness, more burnout and more distress the same day, even when adolescents ate with the family. It is possible that adolescents may feel unwilling or unable to open up and confide in their family (Camara, Bacigalupe, & Padilla, 2017), even though the meal may provide an opportunity to do so (Fiese et al., 2006). Thus, adolescents may not receive the emotional support and guidance that the family members could offer during the meal (Fiese et al., 2006). Another possible explanation is that even if the adolescent confides in family members, family members may not know how best

to provide support for relationships that occur outside of the home. Parents, guardians and siblings may not say the “right” thing to help the adolescent resolve their negative emotions from peer conflict and experience relief (Camara et al., 2017). It is also possible that despite the adolescent confiding and receiving emotional support during family meals, the support may not alleviate the stresses of peer conflict because it does not involve positively engaging with the same person or people with whom the conflict occurred. Families’ attempts to offset conflict by providing warmth and structure may be uniquely valuable for counteracting previous upsetting interactions that occurred within the family, as opposed to those that occurred outside the home (Labella & Masten, 2018).

Follow up sensitivity analysis revealed an additional buffering effect for peer conflict and emotional risk the next day. Peer conflict spilled over into more distress the day after there was no family meal, but only for younger adolescents, and not for older adolescents. This contrasts our prior findings in which family conflict spilled over into more distress the day after there were no family meal only for older adolescents, and not for younger adolescents. One possible explanation is that younger adolescents may be more likely to process their experiences of peer conflict with their families at mealtime, compared with older adolescents. In contrast, older adolescents may discuss experiences of peer conflict with friends more and receive more support from friends, because older adolescents on average spend more time with peers away from home (Brannen, 2002). In this way, family meals may buffer the association between peer conflict and heightened distress the next day for younger adolescents only because they are more likely to open up to their family and receive support for peer conflict when it occurs. These results support a growing body of literature documenting how family mealtime communication is beneficial to adolescents’ emotional well-being (Offer, 2013a).

Limitations and Future Directions

Several limitations should be acknowledged. First, because of the rich nature of daily diary data, there was some missing data, which may or may not have been random. Days that adolescents did not respond to the diaries might have been most difficult, with the highest levels of family and peer conflict, and these could be missing from analysis. In addition, our measure of family meals was dichotomous, indexing whether or not the adolescent ate any meal with the family that day. We are unable to shed light on the chronological order of events. Specifically, we are unable to determine whether family meals and interpersonal conflict occurred before, during or after adolescents’ emotions. Similarly, although we did not distinguish between breakfast, lunch and dinner, the specific meal might also matter. For example, family dinners may more effectively buffer the negative effect of conflicts during the day, compared with breakfast which likely occurs before potential conflicts. However, the observed covariation of these experiences within days highlight a dynamic interplay within days and across days, regardless of the specific order in which they occurred.

Our measure of family meals was also unable to shed light on the quality of the interaction during the meals, for example which topics were discussed and if emotional support was provided. As such, it is unclear from the current study the specific interpersonal processes that occurred during family meals (e.g., personal disclo-

sure, emotional support) that may mediate or impact the observed daily associations between family meals, interpersonal conflict, and emotions. Future research should measure the specific conversation topics and behaviors during family meals, to specify which aspects of the quality of the interaction during family meals promote positive emotionality, even in the context of family disputes. Measuring conversations and behaviors during family meals may also reveal more individual differences (e.g., Meier & Musick, 2014). For example, it is possible that family meals are only protective for adolescents who experience relatively more positive familial relationships, but are not protective—or perhaps even exacerbate the effects of conflict—among adolescents who experience family interaction as more stressful (Meier & Musick, 2014).

Future research should also compare the effects of family meals to other family quality time, to clarify whether the process of eating together is uniquely valuable or if similar benefits may be derived from other consistent, daily family activities. For example, an alternative explanation to our findings may be that quality time with the family—rather than in particular the act of eating together—has a protective effect for adolescents. Conversely, it is also feasible that simply “slowing down,” and taking time to attend to basic human needs (i.e., eating) is protective—regardless of whether or not family members are present.

In addition, although the present study utilizes daily diary methods that account for individual differences and, thus, offers robust predictive power (Telzer & Fuligni, 2009b), causality cannot be determined in this study. Future experimental work could address this issue by randomly assigning adolescents to eat with their families (or not) and examine the psychological outcomes of such a manipulation. For example, randomized control trials have shown that family meals can improve psychological symptoms in clinical samples of adolescents (Herscovici, Kovalskys, & Orelana, 2017), and increase healthy eating habits in small samples of preadolescents (Flattum et al., 2015). Consistent with these findings, our results suggest that family meals could be valuable components of interventions designed to increase positive emotions, improve familial relationships, and reduce adolescent risk in families who experience high levels of conflict. Moreover, such interventions may be more effective for older compared with younger adolescents.

Conclusion

The current study extends long-standing interest in understanding how family meals impact youths’ wellbeing and development. Cross-sectional and longitudinal research have shown that more frequent family meals on average during childhood are associated with better physical and mental health. This study fills an important gap in the literature: it addresses how adolescents experience family meals on a day to day basis, and the extent to which family meals serve as a daily protective factor. Consistent with prior evidence that more frequent family meals on average are a positive and stable routine that is integral for positive adolescent development (Goldfarb et al., 2014; Jones, 2018), our findings highlight important daily associations between family meals and positive emotionality—even in the context of conflict—that in turn may partially explain how family meals are related to long-term wellbeing downstream.

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