


Daily Links Between Helping Behaviors and Emotional Well-Being During Late Adolescence

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We investigated daily associations between helping behaviors and emotional well-being during late adolescence, examining whether these links depend on the recipient of help (i.e., friend vs. roommate), type of help (i.e., instrumental vs. emotional), and individual differences in the helper (i.e., gender and empathy). First-year college students ($N = 411$, 63.5% women, $M_{\text{age}} = 18.62$ years) completed diary checklists for eight days, reporting whether they provided instrumental and emotional support to a friend or roommate, and positive and negative emotions. On days that adolescents provided instrumental assistance to friends they felt more positive affect, but men also felt more negative affect. Providing instrumental and emotional support to roommates and providing emotional support to friends did not predict daily emotions.

Helping others is rooted deeply in human nature (Hepach, 2017) and can be immensely rewarding both in the moment and over time (Aknin, Van de Vondervoort, & Hamlin, 2018; Brown, Nesse, Vinokur, & Smith, 2003; Rand & Nowak, 2013). For example, when adolescents provide instrumental and emotional support to others, there is an opportunity to gain a sense of autonomy, identity, and emotional closeness to others (Fuligni, 2018). Helping may be particularly meaningful during the transition away from the family home into college, when adolescents become increasingly capable of contributing in consequential ways, and their social networks expand as they begin to build new relationships with friends and roommates (Crocker & Canevello, 2008; Fuligni, 2018; Morelli, Lee, Arnn, & Zaki, 2015; Morelli, Ong, Makati, Jackson, & Zaki, 2017). This important developmental

transition represents a critical period for understanding how adolescents' provision of support to peers impacts well-being, as it may shed light on how helping behaviors promote or undermine emotional well-being and downstream social and academic success. In the present study, we use rich daily diary methods to examine whether providing instrumental and emotional support to friends and roommates during the first year of college is associated with positive or negative affect the same day. Further, we investigated individual differences in these associations by adolescents' gender and trait-level empathetic concern.

Developmental Transitions and Helping

The transition out of the home and into college is a key period for understanding adolescents' provision of support to others, because this time is marked by substantial changes in adolescents' social networks and social behaviors (Fuligni, 2018). Feeling socially connected and capable of contributing is integral to adolescents' development, as their existing support networks at home are disrupted and they shift toward increased independence from the family and interconnection with peers (Fuligni, 2018). Surrounded by new peers on

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campus, adolescents begin to interact with new social agents (such as friends and roommates), many of whom may need support due to the difficulties of adjusting to unfamiliar living and learning environments (Azmitia, Syed, & Radmacher, 2013; Krumrei-Mancuso, Newton, Kim, & Wilcox, 2013; Thurber & Walton, 2012). At the same time, adolescents are also experiencing a life transition which may represent a sensitive period for their own emotional risk. Since helping behaviors during adolescence carry the potential for both self-costs and benefits, it is crucial to investigate how providing support to peers during the first year of college is related to well-being.

Rewards and Costs of Helping

Despite the importance of understanding helping behaviors during the first year of college, this period has been understudied. Much of what we know about adolescents' helping behaviors comes from literature examining younger adolescents' provision of support to the family (Armstrong-Carter, Olson, & Telzer, 2019), participation in formal volunteer work (Ballard, Hoyt, & Pachucki, 2019; Lichter, Shanahan, & Gardner, 2002), or average levels of helping behaviors as assessed retrospectively by the individual or by peer nominations (e.g., Eisenberg et al., 2014; Wentzel et al., 2007). This work broadly suggests that helping others is beneficial in that it confers a sense of social identity, connection to others, and personal fulfillment (Ballard et al., 2019; Eisenberg et al., 2014; Inagaki & Orehek, 2017; Telzer, Masten, Berkman, Lieberman, & Fuligni, 2010; Wentzel et al., 2007). Consistent with this notion, one small sample of 54 friendship dyads showed that on days when first-year college students provided emotional support to one close friend, they felt happier and less stressed, anxious, and lonely (Morelli et al., 2015). At the same time, however, helping peers may not always be uniformly positive. Providing support can be costly, if it conflicts with other social and academic demands or is stressful or emotionally draining (Cohen, Greene, Toyinbo, & Siskowski, 2012; Fuligni et al., 2009).

Instrumental Assistance vs Emotional Support

The extent to which helping peers is beneficial or costly may depend on the type of help, since different helping behaviors may cause or contribute to very different emotions (Tsai, Gonzales, & Fuligni, 2016). Recent work has emphasized the importance

of distinguishing between instrumental assistance (e.g., tangible assistance like lending a car) and emotional support (e.g., listening to or advising a peer). Emotional support involves adolescents' awareness and response to another person's challenges or worry (Hooper, Marotta, & Lanthier, 2008), and may impact adolescents' emotional state and behaviors in ways that are not apparent by their provision of instrumental assistance (Tsai et al., 2016; Tsai, Telzer, Gonzales, & Fuligni, 2013). Consistent with this notion, providing emotional support to a close friend, but not instrumental assistance, was associated with greater well-being in a small sample of first-year college students (Morelli et al., 2015). Research in larger samples can help to clarify whether the effects of helping peers during the first year of college depends on whether the help is instrumental or emotional in nature.

Social Target of Support

To elucidate the extent to which helping peers during the college transition is emotionally rewarding or taxing, we also need to capture multiple aspects of students' expanding social networks (Adams & Marshall, 1996; Morelli et al., 2015). During the first year of college, the impact of providing support may depend on whether the adolescent helps a friend or a roommate. Researchers have hypothesized that helping others may be most beneficial when the recipient is emotionally close (Brown et al., 2003) or shares a salient social identity (Adams & Marshall, 1996). Despite this theory, most prior research has examined adolescents' provision of support to a single individual or unit, such as one close friend, romantic partner, family, or charity (Crocker & Canevello, 2008; Morelli et al., 2015; Telzer & Fuligni, 2009). Some research has examined younger adolescents' provision of support to family compared to friends and strangers, but this has focused on the family contexts in which it occurs, rather than the emotions it elicits (Padilla-Walker & Christensen, 2011; Padilla-Walker, Nielson, & Day, 2016). Little work has specifically compared the extent to which adolescents feel differently after helping a friend versus another peer who is more proximal, such as a college roommate. On the one hand, adolescents may feel happier after helping a roommate if they feel more intimate due to cohabitation (Erb, Renshaw, Short, & Pollard, 2014). On the other hand, adolescents may feel happier after helping a friend whom they have personally selected and enjoy, and may

feel relatively more burdened helping a roommate who was randomly assigned to them (Brown et al., 2003; Erb et al., 2014). Directly comparing the effects of helping a friend versus helping a roommate during college may shed light on the social contexts in which helping behaviors during this sensitive period are beneficial versus burdensome.

Individual Differences in Gender and Empathy

In addition to the target of support, there may be individual differences in the helpers' traits that influence whether support provision is experienced positively or negatively. For example, providing support may be more or less rewarding for young women compared to young men (Fuligni, 2018; Tsai et al., 2016). Due to gender norms, girls may be expected to provide higher levels of instrumental and emotional support to peers compared to boys (Rose & Asher, 2004) and so young women may feel either greater burden due to the expectations, or greater satisfaction as the result of having fulfilled an expected role (Rose & Asher, 2004).

Similarly, the emotional associations with helping may also vary by the helper's level of emotional concern. One possibility is that feeling emotionally invested in helping others may increase emotional reward for the helper (Morelli et al., 2015). More empathetic individuals may experience more of a "warm glow" after providing support (Crocker & Canevello, 2008), whereas less empathetic individuals may experience providing support as more of a chore, inconvenience, or less emotionally satisfying. Supporting this notion, in a study of 65 roommate dyads during the first year of college, adolescents who helped their roommate out of genuine compassion and concern felt less distressed compared those who were more self-oriented (Crocker & Canevello, 2008). More research is needed to understand how provision of support to both roommates and friends during late adolescence is related to daily variations in emotional well-being, and how these associations differ by gender and level of empathetic concern. This is important because it may help to illuminate behavioral and trait-level contributors to adolescents' emotional adjustment during the college transition, a period which sets the stage for well-being later in life (Zarrett & Eccles, 2006).

Daily Diary Method

The daily diary method is uniquely useful for examining questions related to daily helping behaviors and emotions (Telzer & Fuligni, 2009). 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 behaviors and feelings co-occur on the same day. For example, on days that adolescents emotionally support a friend, are they more likely to feel more positive or negative emotions? While not causal, data of this nature allow us to examine associations within the same individual, thereby holding constant the extraneous traits and characteristics of the adolescent. Daily diary methods also enable us to examine interactions between multiple processes that occur across the trait level and daily level. For example, does the daily association between provision of support and emotions depend on the adolescents' gender and how empathetic they tend to be? In light of the benefits of daily diaries, recent studies have emphasized the importance of examining helping behaviors and emotions at the daily level. For example, small samples ($Ns < 65$) have independently linked helping behaviors during the first year of college to fluctuations in daily emotions (Crocker & Canevello, 2008; Morelli et al., 2015), although help toward friends versus roommates have not been directly compared. Extending this work to examine daily associations between helping behaviors and emotions in a large sample can help to illuminate how the effects of helping may differ based on the type of help (emotional vs instrumental), target of support (roommate, close friend), as well as trait-level individual differences.

Current Study

In the current study, we used the daily diary method in a large sample of first-year college students to examine whether daily provisions of support to friends and roommates were uniquely related to emotional well-being the same day. To unpack the possibility that different types of helping behaviors differentially relate to emotions, we tested both instrumental assistance (e.g., tangible assistance such as lending a car) and emotional support (e.g., listening to or advising a peer). By distinguishing between support provided to friends vs roommates, we were able to discern whether the emotional associations with lending these two types of support differs as a function of the social role of the recipient. Moreover, to investigate individual differences, we tested whether these associations varied by adolescents' gender and trait-level

empathetic concern. Based on prior research, we hypothesized that providing instrumental and emotional support to others would be associated with greater positive affect the same day, and this association would be strongest when the recipient was a friend (compared to a roommate), and when the helper was a young woman or more empathetic.

METHODS

Participants

The present study was drawn from a study of 411 first-year college students at a large, public university in the Midwestern United States ($M_{\text{age}} = 18.62$ years, $SD = 0.37$; 66.09% young women). The sample was representative of the incoming class: 40.41% of participants were non-Hispanic White, 26.62% were Asian, 6.95% were mixed race, 8.44% were Latinx, 2.84% were Other Race, and 4.40% were African American. 10.34% of participants declined to report their race. All participants were living in University housing with a roommate who was assigned to them by University administration. Participants provided written consent/assent and procedures were approved by the sponsoring institution's Institutional Review Board.

Procedure

Incoming first-year students were contacted via email and invited to complete the study. Only incoming first-year students living in university housing with one roommate were invited to participate and students living in off campus housing or with multiple roommates were excluded. Approximately two months after the start of their first year of college, participants completed a questionnaire as well as eight nights of daily diaries online. Participants completed the questionnaire via a unique link sent to their university email account. Daily diaries were sent via email at 9:00 pm each night for eight consecutive nights. Each email contained a unique link to that day's diary. Participants who completed the study received a voucher to a local business and were entered into a drawing to win \$100 (USD).

Measures

Daily helping behavior. Each evening for eight days, participants indicated on the daily checklist whether or not they engaged in four different helping behaviors each day. Participants were instructed

to complete the daily checklist shortly before bedtime and were allowed to complete the checklist until the end of the day (i.e., 12 am). They were asked to report both emotional (one item: listened, gave advice, comforted) and instrumental assistance (three items: lent an item or money; helped with schoolwork; helped with chores/errands). Participants indicated separately whether they provided each type of support to their roommate or a friend. Participants could choose to check either "roommate," "friend," or both. Responses were computed into four categorical variables (1 = yes, 0 = no) each day that indexed whether they provided any type of instrumental assistance to a friend, whether they provided any type of instrumental assistance to a roommate, whether they provided emotional support to a friend, and whether they provided emotional support to a roommate. We did not explicitly address whether participants considered their roommates to also be friends or not.

Daily emotional well-being. Daily emotional well-being was 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 (e.g., Telzer & Fuligni, 2009). Participants used a 5-point scale ranging from 1 (not at all) to 5 (extremely) to indicate the extent to which they felt a number of emotions each day. *Positive Affect* was calculated as the mean of seven items (cheerful, calm, enthusiastic, excited, happy, interested, joyful), overall Cronbach's $\alpha = 0.95$, daily $\alpha = 0.92$ – 0.94 . *Negative Affect* was calculated as the mean of 15 items (discouraged, angry, hopeless, nervous, on edge, sad, mad, uneasy, worried, insecure, self-conscious, lonely, bored, embarrassed), overall Cronbach's $\alpha = 0.96$, daily $\alpha = 0.92$ – 0.94 .

Empathy. In the self-reported questionnaire, participants completed the Empathic Concern subscale of the Interpersonal Reactive Index (Davis, 1980). Participants responded to 7 items by indicating how well each item describes them on a 5-point scale (0 = "Not well" to 4 = "Very well"). Example items include "I often have tender, concerned feelings for people less fortunate than me" and "When I see someone being taken advantage of, I feel protective towards them" ($\alpha = 0.79$). Higher scores represent higher empathy.

Data Analysis

Our aim was to understand how provision of instrumental and emotional support to friends and

roommates relate to positive and negative affect the same day, and if these associations vary by gender and level of trait empathetic concern. We conducted linear mixed effect models that nested days (Level 1) within participants (Level 2). We person-centered all level-1 predictors, and we included on the intercept person-mean values for each of our daily predictors (i.e., each helping behavior; Curran & Bauer, 2011). This statistical approach accounts for dependency within participants and introduces less bias compared to traditional statistical analyses, such as repeated measures analysis of variance (Finch, Bolin, & Kelley, 2014; Raudenbush & Bryk, 2002). To increase the robustness of our findings, we additionally controlled for previous day levels of positive and negative affect (i.e., to test if helping behaviors were associated with positive and negative affect over and above prior day levels). Model 1 tested all four helping behaviors (instrumental and emotional support to friends and roommates) as simultaneous Level 1 predictors of positive and negative affect the same day. Each dependent variable (i.e., positive and negative affect) was run separately. Model 2 additionally included gender and empathy, as well as interaction terms between gender, empathy, and each helping behavior. All interactions were tested simultaneously. Missing data were low. For all helping variables, 1% of days were missing. For affect variables, 1% - 3% of days were missing. For empathy and gender, 8% and 1% participants were missing, respectively. All analyses were conducted using Stata Software (StataSE, Version 15.1.632). We conducted follow-up models to test potential bidirectional effects, as described further below.

RESULTS

Sample Characteristics

Table 1 displays descriptive statistics for sample constructs for the full sample and by gender. Table 2 displays bivariate correlations of mean values across days between study variables. On average, adolescents provided instrumental assistance to a friend on 45% of days and instrumental assistance to a roommate on 23% of days. Similarly, adolescents provided emotional support to a friend on 45% of days and emotional support to a roommate on 24% of days. Young women were significantly more likely to provide instrumental assistance to a friend, and emotional support to both a friend and a roommate, compared to young men. There were no gender differences in

instrumental assistance to a roommate. Young women also reported significantly higher levels of positive affect and empathy compared to young men. There was no gender difference in levels of negative affect.

Daily Associations between Helping and Emotional Well-being

We first tested whether providing instrumental and emotional support to friends and roommates were uniquely associated with positive and negative affect, over and above prior day levels of positive and negative affect. These direct associations are shown in Table 3, Model 1. On days that adolescents provided greater instrumental support to a friend, they experienced higher levels of positive affect over and above prior day levels of affect. There were no other significant direct associations between daily helping behaviors and positive or negative affect.

In addition, at the between-person level (i.e., person-mean level-1 variables), adolescents who provided more instrumental assistance to a friend on average across days experienced more positive affect compared to adolescents who provided less instrumental support. Adolescents who provided more instrumental assistance to a roommate on average across days experienced more negative affect compared to adolescents who provided less instrumental support.

Cross-Level Interactions with Gender and Empathy

Our next model tested whether gender and empathy moderated the daily-level associations between provision of support and positive and negative affect. These cross-level interactions are shown in Table 3, Model 2.

Gender. The daily association between the provision of instrumental assistance to friends and negative affect was significantly moderated by gender. As shown in Figure 1, providing instrumental assistance to a friend was associated with greater negative affect for young men but not young women.

Empathy. Empathy was directly associated with positive affect, such that adolescents who were more empathic experienced higher levels of positive affect. The interactions between empathy and provision of support were not significant

TABLE 1
Descriptive Statistics for Study Constructs

	Full Sample		Young Women		Young Men		T statistic	p	Cohen's D	Range
	M	SD	M	SD	M	SD				
Empathy	1.21	(0.65)	1.44	(0.66)	1.09	(0.62)	-11.84	<.000	-0.56	0-4
Inst. Assistance to Friend	0.45	(0.50)	0.47	(0.50)	0.41	(0.49)	2.24	.025	0.10	0-1
Inst. Assistance to Roommate	0.23	(0.42)	0.23	(0.42)	0.24	(0.43)	-7.43	.457	-0.03	0-1
Emo. Support to Friend	0.45	(0.50)	0.53	(0.50)	0.30	(0.46)	10.43	<.000	0.48	0-1
Emo. Support to Roommate	0.24	(0.43)	0.30	(0.46)	0.13	(0.34)	8.60	<.000	0.39	0-1
Positive Affect	3.03	(0.95)	3.06	(0.91)	2.97	(1.02)	2.04	.041	0.10	0-5
Negative Affect	1.81	(0.72)	1.80	(0.72)	1.83	(0.72)	-0.66	.509	-0.03	0-5

Note. Means for the daily variables represent the mean values across all eight days of daily diaries. Independent samples t-tests were conducted to compare the means for young men and women.

Inst. = Instrumental; Emo. = Emotional.

TABLE 2
Correlations of Mean Values Across Days Between Study Constructs

Variable	1	2	3	4	5	6
1. Empathy	-					
2. Inst. Assistance to Friend	0.09***	-				
3. Inst. Assistance to Roommate	0.02	0.15***	-			
4. Emo. Support to Friend	0.19***	0.27***	0.05*	-		
5. Emo. Support to Roommate	0.14***	0.12***	0.24***	0.25***	-	
6. Positive Affect	0.24***	0.17***	0.09***	0.14***	0.11***	-
7. Negative Affect	0.00	0.07**	0.10***	0.07**	0.06**	-0.20***

Note. Inst. = Instrumental. Emo. = Emotional.

*** $p < .001$, ** $p < .01$, * $p < .05$, + $p < .1$.

($ps > .207$). We also tested a simpler model which was identical to the model described above, *except* that we did not control for previous day levels of positive and negative affect (see Appendix S1). All results above were the same with an additional significant interaction. Specifically, the daily-level association between the provision of emotional support to a roommate and negative affect was significantly moderated by empathy ($\beta = -0.10$, $SE = 0.04$, $p = .023$), such that adolescents who were low in empathy (1.6 SD below the mean) experienced more negative emotions on days that they provided support for roommates.

Bidirectional Associations

To investigate the possibility of bidirectional effects, we tested a model in which positive and negative affect predicted each type of helping behavior the same day, controlling for levels of that helping behavior the previous day. As shown in Table 4, positive affect was associated with higher

levels of instrumental support to friends over and above prior day levels. There were no other significant daily associations. These results suggest that adolescents help their friends more on days that they feel relatively more positive affect.

DISCUSSION

The goal of this study was to understand how adolescents' provision of instrumental and emotional support to friends and roommates is associated with emotional well-being the same day, over and above prior day emotions. Moreover, we investigated whether these associations vary by gender and level of empathic concern. By examining these associations on the daily level in a large sample of first-year college students, we demonstrated that providing instrumental support to friends is associated with more positive emotions, but it is also associated with more negative emotions for young men. In contrast, providing instrumental and emotional support to roommates and providing

TABLE 3
Daily Associations Between Four Types of Helping Behaviors and Positive and Negative Affect

	<i>Positive Affect</i>				<i>Negative Affect</i>			
	<i>Model 1</i>		<i>Model 2</i>		<i>Model 1</i>		<i>Model 2</i>	
	β	SE	β	SE	β	SE	β	SE
<i>Previous Day Variables</i>								
Previous Day Positive Affect	0.37***	(0.03)	0.35***	(0.03)	-0.04+	(0.02)	-0.04	(0.02)
Previous Day Negative Affect	-0.02	(0.03)	-0.02	(0.03)	0.53***	(0.03)	0.55***	(0.03)
<i>Mean-Centered Level-1 Variables</i>								
Instrumental Assistance to Friend	0.10*	(0.04)	0.15**	(0.05)	0.01	(0.04)	-0.04	(0.05)
Instrumental Assistance to Roommate	0.05	(0.04)	0.01	(0.05)	-0.00	(0.04)	0.00	(0.05)
Emotional Support to Friend	0.03	(0.05)	0.03	(0.06)	-0.04	(0.04)	-0.04	(0.05)
Emotional Support to Roommate	-0.04	(0.05)	-0.04	(0.06)	-0.01	(0.05)	-0.03	(0.05)
<i>Person-Mean Level-1 Variables</i>								
Instrumental Assistance to Friend	0.33**	(0.11)	0.38**	(0.12)	0.06	(0.11)	-0.06	(0.11)
Instrumental Assistance to Roommate	0.12	(0.13)	0.15	(0.14)	0.44***	(0.13)	0.43***	(0.13)
Emotional Support to Friend	0.10	(0.11)	0.01	(0.12)	0.12	(0.11)	0.21+	(0.12)
Emotional Support to Roommate	0.21+	(0.12)	0.20	(0.13)	-0.01	(0.12)	-0.02	(0.12)
<i>Level-2 Variables</i>								
Gender			0.11	(0.09)			-0.08	(0.09)
Trait Empathy			0.13**	(0.04)			-0.01	(0.04)
<i>Cross-Level Interactions</i>								
Gender \times Instrumental Assistance to Friend			-0.14	(0.09)			0.21**	(0.08)
Gender \times Instrumental Assistance to Roommate			-0.04	(0.10)			-0.00	(0.09)
Gender \times Emotional Support to Friend			0.11	(0.09)			-0.03	(0.08)
Gender \times Emotional Support to Roommate			0.03	(0.12)			0.15	(0.11)
Empathy \times Instrumental Assistance to Friend			-0.03	(0.05)			0.02	(0.04)
Empathy \times Instrumental Assistance to Roommate			0.01	(0.05)			0.02	(0.04)
Empathy \times Emotional Support to Friend			0.02	(0.05)			-0.02	(0.04)
Empathy \times Emotional Support to Roommate			-0.06	(0.05)			-0.06	(0.05)
Constant	-1.42***	(0.12)	-1.34***	(0.13)	-1.05***	(0.11)	-1.07***	(0.12)

Note. Robust standard errors are reported. Standard errors in parentheses.

Gender was coded young men = 1, young women = 0. All level 1 predictors were group mean centered.

*** $p < .001$, ** $p < 0.01$, * $p < 0.05$.

emotional support to friends did not predict positive or negative emotions.

Adolescents Feel More Positive on Days They Provide Instrumental Support to Friends

Adolescents felt higher levels of positive affect on days that they provided instrumental assistance to their friends, over and above prior day levels of positive and negative affect. In contrast, providing emotional support to a friend—or instrumental and emotional support to a roommate—were not associated with temporal increases or decreases in positive or negative affect. These results suggest that helping behaviors are differentially linked to emotions, depending on both the *target* of support and the *type* of support. It is possible that providing instrumental assistance to friends is associated with more positive emotions during the first year of

college because adolescents choose their friends and subsequently may better enjoy these relationships and identify with them more closely compared to roommates. This interpretation is consistent with social identity theory, which posits that adolescents who feel more connected to others' social identities—such as close friends—are more likely to support that individual or group, and experience positive emotions (Adams & Marshall, 1996). If friends share adolescents' most important social identities (Hogg, 2003), then helping friends may be linked with more positive emotions. In contrast, helping a roommate who was assigned by university administration and not necessarily as integrated into a shared identity may not be as closely linked to emotional experiences (Adams & Marshall, 1996; Erb et al., 2014).

Our finding that adolescents feel relatively happier on days that they helped a friend, but not a

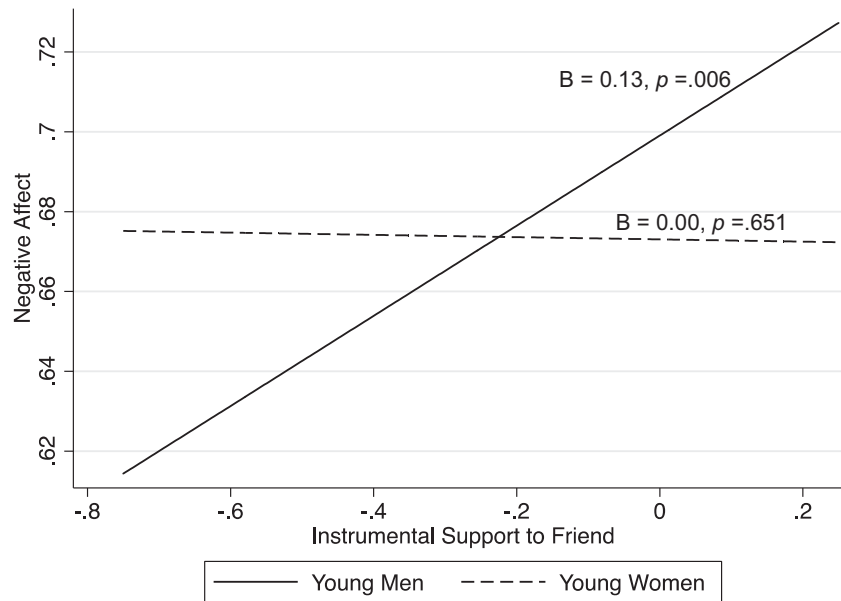


FIGURE 1 Providing instrumental assistance to a friend is associated with greater negative affect the same day for young men but not young women.

roommate, is also consistent with evolutionary theories of altruism and empirical evidence from adults. These have suggested that helping others may be more rewarding when the recipient is emotionally close (Brown & Brown, 2006). It has been hypothesized that feelings of closeness with friends may foster the desire to give support and ultimately make that support feel more rewarding (Brown & Brown, 2006).

While we found that only instrumental support was associated with greater well-being the same day, this contrasts previous evidence from a small sample in which first-year college students felt happier after providing emotional support to a close friend, but not after providing instrumental assistance to a close friend (Morelli et al., 2015). This disparity in findings may be in part due to differences in measures or sample sizes, since our larger sample may be more able to detect uniquely significant effects. Alternatively, because providing emotional support involves adolescents' awareness and response to their friend's challenges or worries (Hooper et al., 2008), emotional support may not be as strongly linked to positive emotions compared to providing instrumental assistance (Tsai et al., 2016, 2013).

Our study brings together two small studies during the first year of college which have independently linked helping behaviors toward a close friend to greater positive emotionality (Morelli et al., 2015) and helping behaviors toward a

roommate to greater positive emotionality for compassionate individuals (Crocker & Canevello, 2008). We build on this work by comparing the effects of two targets of support (i.e., friends and roommates), and two types of helping behaviors, in a large sample. Our results suggest that providing instrumental support in the social context of a friend, compared to a roommate, may be associated with relatively more positive emotions, over and above the emotions the previous day.

Men Also Feel More Negative on Days They Provide Instrumental Assistance to a Friend

While providing instrumental assistance to friends was on average associated with greater positive affect the same day, providing instrumental assistance to friends was also linked with greater negative affect for young men (but not young women). This finding is consistent with previous evidence that 10- to 11-year-old boys respond more negatively to help-giving and help-seeking laboratory tasks compared to girls (Rose & Asher, 2004). Since girls are more likely than boys to engage prosocially with friends both in prior research among children and adolescents (e.g., Maccoby, 1990; Rose & Asher, 2004) and as reflected in mean-level differences in our sample, it is possible that young women seek out or capitalize on opportunities to help friends more than young men in part because they find it more intrinsically rewarding

TABLE 4
Daily Associations Between Positive and Negative Affect and Four Types of Helping Behaviors, Controlling for Prior Day Levels

	Model 1				Model 2			
	<i>Instrumental Assistance to Friend</i> β (SE)	<i>Emotional Support to Friend</i> β (SE)	<i>Instrumental Assistance to Roommate</i> β (SE)	<i>Emotional Support to Roommate</i> β (SE)	<i>Instrumental Assistance to Friend</i> β (SE)	<i>Emotional Support to Friend</i> β (SE)	<i>Instrumental Assistance to Roommate</i> β (SE)	<i>Emotional Support to Roommate</i> β (SE)
Previous Day Helping Behavior	0.10 (0.03)***	0.10 (0.02)***	0.07 (0.02)**	0.23 (0.02)***	0.11 (0.03)***	0.11 (0.02)***	0.06 (0.02)**	0.24 (0.02)***
<i>Mean-Centered Level-1 Variables</i>								
Positive Affect	0.05 (0.02)*	0.03 (0.02)	0.02 (0.02)	-0.01 (0.02)	-	-	-	-
Negative Affect	-	-	-	-	0.02 (0.03)	-0.00 (0.03)	-0.01 (0.02)	-0.01 (0.02)
<i>Person-Mean Level-1 Variables</i>								
Positive Affect	0.09 (0.02)***	0.07 (0.02)**	0.04 (0.02)*	0.06 (0.02)***	-	-	-	-
Negative Affect	-	-	-	-	0.05 (0.03)	0.05 (0.03)	0.08 (0.02)***	0.04 (0.02)
Constant	0.09 (0.07)	0.19 (0.07)**	0.07 (0.06)	-0.01 (0.05)	0.27 (0.06)***	0.35 (0.06)***	0.10 (0.05)*	0.18 (0.04)***

Note. Robust standard errors are reported. Standard errors in parentheses. All level 1 predictors were group mean centered.
*** $p < .001$, ** $p < .01$, * $p < .05$.

(Eisenberg, VanSchyndel, & Spinrad, 2016). In contrast, young men may feel more negative emotions on days when they provide instrumental assistance if they expect relatively less of their friendships compared to women (Parker & Asher, 1993; Rose & Asher, 2004, 2017), and so feel that helping represents extra, unwarranted demands. It is possible that there is this gender difference in the effects of instrumental assistance, but not of emotional support, in part because young men provided very low levels of emotional support in our sample. In prior research, young boys have also been shown to be less likely to talk about problems compared to young girls during middle childhood (Maccoby, 1990; Rose & Asher, 2004; Tsai et al., 2016). Thus, low variability may partially explain why young men's provision of emotional support to friends is not associated with either positive or negative affect.

Equivocal Findings for Empathy

Our primary model demonstrated a single direct association between empathy and affect, such that adolescents who were more empathetic experienced higher levels of daily positive affect. However, a follow-up model that did not control for prior day levels of affect revealed a significant moderation. Specifically, providing emotional support to a roommate was associated with greater negative affect the same day only for adolescents who had low levels of empathy. This is consistent with prior evidence that first-year college students who helped their roommate due to genuine compassion and concern felt less distressed the same day, compared to students who were more self-oriented (Crocker & Canevello, 2008). Emotional support may be linked to negative emotions for less empathic individuals because listening or comforting another can be emotionally draining, as it involves awareness of others' worries and distress (Hooper et al., 2008; Tsai et al., 2016). In contrast, more empathic individuals may not be as burdened by providing emotional support if they gain a sense of intimacy or satisfaction that offsets these challenges (Brown & Brown, 2006; Crocker & Canevello, 2008). However, it is important to note that emotional support was not linked to negative emotions for less empathic individuals when accounting for prior day levels of affect. This suggests this finding is less robust. Future research should attempt to replicate this finding in other large samples, and conduct robustness checks to examine the conditions under which providing emotional

support may or may not be taxing for less empathic individuals.

Bi-directional Associations

Our study also demonstrated bidirectional associations. Adolescents were more likely to provide instrumental assistance to friends on days that they felt more positive emotions, over and above prior day levels of helping behaviors. Although causality cannot be determined, this bidirectional result supports the notion that providing instrumental support contributes to affective experiences, and affect also contributes to instrumentally supportive behaviors. This finding highlights the importance of investigating bidirectional associations in daily diary research, to reveal previous undetected pathways between daily experiences and behaviors, and to support the interpretation of pathways that were initially hypothesized.

Limitations and Future Directions

Several limitations should be acknowledged. Due to the rich nature of our daily diaries, there was a small amount of missing data. Days that adolescents did not provide daily diary data might represent some of their most difficult days, and thus, we may be missing important days that were more stressful for adolescents. In addition, our measures of instrumental and emotional support were dichotomous, indexing whether or not the adolescent provided any instrumental or emotional support that day. They do not account for the amount of time spent on each activity or distinguish between activities within each category (i.e., instrumental or emotional). As such, it is unclear from the current study how intensity or timing within individual days may impact the associations between provision of support to peers and emotionality. Future research should measure the timing and chronicity of providing support to peers, as well as motivation (i.e., intrinsic or extrinsic) to provide a more nuanced index, and to shed light on the mechanisms through which provision of instrumental and emotional support are related to more positive affect on average (e.g., by increasing positive shared experiences, self-confidence).

It is possible that some roommates are also considered friends, so there may be some overlap between these two constructs. Although our divergent pattern of results—and unique effects—suggests that perceptions of friends vs roommates are distinct, future research should investigate how the

observed associations change depending on whether roommates are also considered friends or by the quality of their relationship. Future research should also investigate whether individual differences in the helping recipient moderate links between helping and emotional well-being, such as gender, friendship quality, and duration of relationship. Such research may clarify the generalizability of our findings across diverse relationship dyads. Generalizability should also be investigated across different college contexts and time periods, for example, providing support to friends may be associated with more positive emotions particularly during times of heightened stress such as exam season. It is also important to investigate helping behaviors outside of the college context during this developmental period, for example, among adolescents who move out of the family home but begin work rather than higher education.

CONCLUSION

The current study extends our understanding of adolescents' provision of help to peers during the important developmental transition into college. Much of what we know about adolescents' helping behaviors comes from literature examining younger adolescents' provision of support to the family (Armstrong-Carter, Ivory, Lin, et al., 2019; Armstrong-Carter, Olson et al., 2019; Fuligni & Telzer, 2013), participation in formal volunteer work (Ballard et al., 2019; Lichter et al., 2002), or average levels of helping behaviors (Wentzel et al., 2007). We build on this work by demonstrating that provision of instrumental support to friends (not emotional support, or instrumental or emotional support to roommates) was linked with positive emotions the same day. However, providing instrumental support to friends was also linked with negative emotions the same day for young men. As such, the effects of helping vary by the recipient *and* by the type of support provided. Such insights are critical for informing future research and for designing effective interventions that promote positive psychosocial adjustment during a key developmental transition toward expanding social networks and increasing independence.

REFERENCES

- Adams, G. R., & Marshall, S. K. (1996). A developmental social psychology of identity: Understanding the person-in-context. *Journal of Adolescence*, 19(5), 429–442. <https://doi.org/10.1006/jado.1996.0041>
- Aknin, L. B., Van de Vondervoort, J. W., & Hamlin, J. K. (2018). Positive feelings reward and promote prosocial behavior. *Current Opinion in Psychology*, 20, 55–59. <https://doi.org/10.1016/j.copsyc.2017.08.017>
- Armstrong-Carter, E., Ivory, S., Lin, L. C., Muscatell, K. A., & Telzer, E. H. (2019). Role fulfillment mediates the association between daily family assistance and cortisol awakening response in adolescents. *Child Development*, 91(3), 754–768. <https://doi.org/10.1111/cdev.13213>
- Armstrong-Carter, E., Olson, E., & Telzer, E. (2019). A unifying approach for investigating and understanding youth's help and care for the family. *Child Development Perspectives*, 13(3), 186–192. <https://doi.org/10.1111/cdep.12336>
- Azmitia, M., Syed, M., & Radmacher, K. (2013). Finding your niche: Identity and emotional support in emerging adults' adjustment to the transition to college. *Journal of Research on Adolescence*, 23(4), 744–761. <https://doi.org/10.1111/jora.12037>
- Ballard, P. J., Hoyt, L. T., & Pachucki, M. C. (2019). Impacts of adolescent and young adult civic engagement on health and socioeconomic status in adulthood. *Child Development*, 90(4), 1138–1154. <https://doi.org/10.1111/cdev.12998>
- Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology*, 54(1), 579–616. <https://doi.org/10.1146/annurev.psych.54.101601.145030>
- Brown, S. L., & Brown, R. M. (2006). Selective investment theory: Recasting the functional significance of close relationships. *Psychological Inquiry*, 17(1), 1–29. https://doi.org/10.1207/s15327965pli1701_01
- Brown, S. L., Nesse, R. M., Vinokur, A. D., & Smith, D. M. (2003). Providing social support may be more beneficial than receiving it: Results from a prospective study of mortality. *Psychological Science*, 14(4), 320–327. <https://doi.org/10.1111/1467-9280.14461>
- Cohen, D., Greene, J. A., Toyinbo, P. A., & Siskowski, C. T. (2012). Impact of family caregiving by youth on their psychological well-being: A latent trait analysis. *The Journal of Behavioral Health Services & Research*, 39(3), 245–256. <https://doi.org/10.1007/s11414-011-9264-9>
- Crocker, J., & Canevello, A. (2008). Creating and undermining social support in communal relationships: The role of compassionate and self-image goals. *Journal of Personality and Social Psychology*, 95(3), 555–575. <https://doi.org/10.1037/0022-3514.95.3.555>
- Curran, P. J., & Bauer, D. J. (2011). The disaggregation of within-person and between-person effects in longitudinal models of change. *Annual Review of Psychology*, 62(1), 583–619. <https://doi.org/10.1146/annurev.psych.093008.100356>
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalog of Selected Documents in Psychology*, 10, 85.
- Eisenberg, N., Hofer, C., Sulik, M. J., & Liew, J. (2014). The development of prosocial moral reasoning and a

- prosocial orientation in young adulthood: Concurrent and longitudinal correlates. *Developmental Psychology*, 50, 58–70. <https://doi.org/10.1037/a0032990>
- Eisenberg, N., VanSchyndel, S. K., & Spinrad, T. L. (2016). Prosocial motivation: Inferences from an opaque body of work. *Child Development*, 87(6), 1668–1678. <https://doi.org/10.1111/cdev.12638>
- Erb, S. E., Renshaw, K. D., Short, J. L., & Pollard, J. W. (2014). The importance of college roommate relationships: A review and systemic conceptualization. *Journal of Student Affairs Research and Practice*, 51(1), 43–55. <https://doi.org/10.1515/jsarp-2014-0004>
- Finch, W. H., Bolin, J. H., & Kelley, K. (2014). Group membership prediction when known groups consist of unknown subgroups: A Monte Carlo comparison of methods. *Frontiers in Psychology*, 5(1), <https://doi.org/10.3389/fpsyg.2014.00337>
- Fuligni, A. J. (2018). The need to contribute during adolescence. *Perspectives on Psychological Science*, 14(3), 331–343. <https://doi.org/10.1177/1745691618805437>
- Fuligni, A. J., & Telzer, E. H. (2013). Another way family can get in the head and under the skin: The neurobiology of helping the family. *Child Development Perspectives*, 7(3), 138–142. <https://doi.org/10.1111/cdep.12029>
- Fuligni, A. J., Telzer, E. H., Bower, J., Irwin, M. R., Kiang, L., & Cole, S. W. (2009). Daily family assistance and inflammation among adolescents from Latin American and European backgrounds. *Brain, Behavior, and Immunity*, 23(6), 803–809. <https://doi.org/10.1016/j.bbi.2009.02.021>
- Hepach, R. (2017). Prosocial arousal in children. *Child Development Perspectives*, 11(1), 50–55. <https://doi.org/10.1111/cdep.12209>
- Hogg, M. A. (2003). Social identity. *Handbook of self and identity* (pp. 462–479). New York, NY: The Guilford Press.
- Hooper, L. M., Marotta, S. A., & Lanthier, R. P. (2008). Predictors of growth and distress following childhood parentification: A retrospective exploratory study. *Journal of Child and Family Studies*, 17(5), 693–705. <https://doi.org/10.1007/s10826-007-9184-8>
- Inagaki, T. K., & Orehek, E. (2017). On the benefits of giving social support: When, why, and how support providers gain by caring for others. *Current Directions in Psychological Science*, 26(2), 109–113. <https://doi.org/10.1177/0963721416686212>
- Krumrei-Mancuso, E. J., Newton, F. B., Kim, E., & Wilcox, D. (2013). Psychosocial factors predicting first-year college student success. *Journal of College Student Development*, 54(3), 247–266. <https://doi.org/10.1353/csd.2013.0034>
- Lichter, D. T., Shanahan, M. J., & Gardner, E. L. (2002). Helping others? The effects of childhood poverty and family instability on prosocial behavior. *Youth & Society*, 34(1), 89–119. <https://doi.org/10.1177/0044118X02034001004>
- Maccoby, E. E. (1990). Gender and relationships: A developmental account. *American Psychologist*, 45(4), 513. <https://doi.org/10.1037/0003-066X.45.4.513>
- McNair, D. M., Lorr, M., & Droppleman, L. F. (1971). *Manual for the profile of mood states (POMS)*. San Diego, CA: Educational and Industrial Testing Service.
- Morelli, S. A., Lee, I. A., Arnn, M. E., & Zaki, J. (2015). Emotional and instrumental support provision interact to predict well-being. *Emotion*, 15(4), 484–493. <https://doi.org/10.1037/emo0000084>
- Morelli, S. A., Ong, D. C., Makati, R., Jackson, M. O., & Zaki, J. (2017). Empathy and well-being correlate with centrality in different social networks. *Proceedings of the National Academy of Sciences*, 114(37), 9843–9847. <https://doi.org/10.1073/pnas.1702155114>
- Padilla-Walker, L. M., & Christensen, K. J. (2011). Empathy and self-regulation as mediators between parenting and adolescents' prosocial behavior toward strangers, friends, and family. *Journal of Research on Adolescence*, 21(3), 545–551. <https://doi.org/10.1111/j.1532-7795.2010.00695.x>
- Padilla-Walker, L. M., Nielson, M. G., & Day, R. D. (2016). The role of parental warmth and hostility on adolescents' prosocial behavior toward multiple targets. *Journal of Family Psychology*, 30(3), 331–340. <https://doi.org/10.1037/fam0000157>
- Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology*, 29(4), 611–621. <https://doi.org/10.1037/0012-1649.29.4.611>
- Rand, D. G., & Nowak, M. A. (2013). Human cooperation. *Trends in Cognitive Sciences*, 17(8), 413–425. <https://doi.org/10.1016/j.tics.2013.06.003>
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (Vol. 1). Newbury Park, CA: Sage Publications.
- Rose, A. J., & Asher, S. R. (2004). Children's strategies and goals in response to help-giving and help-seeking tasks within a friendship. *Child Development*, 75(3), 749–763. <https://doi.org/10.1111/j.1467-8624.2004.00704.x>
- Rose, A. J., & Asher, S. R. (2017). The social tasks of friendship: Do boys and girls excel in different tasks? *Child Development Perspectives*, 11(1), 3–8. <https://doi.org/10.1111/cdep.12214>
- Telzer, E. H., & Fuligni, A. J. (2009). Daily family assistance and the psychological well-being of adolescents from Latin American, Asian, and European backgrounds. *Developmental Psychology*, 45(4), 1177–1189. <https://doi.org/10.1037/a0014728>
- Telzer, E. H., Masten, C. L., Berkman, E. T., Lieberman, M. D., & Fuligni, A. J. (2010). Gaining while giving: An fMRI study of the rewards of family assistance among White and Latino youth. *Social Neuroscience*, 5(5–6), 508–518. <https://doi.org/10.1080/17470911003687913>
- Thurber, C. A., & Walton, E. A. (2012). Homesickness and adjustment in university students. *Journal of American College Health*, 60(5), 415–419. <https://doi.org/10.1080/07448481.2012.673520>

- Tsai, K. M., Gonzales, N. A., & Fuligni, A. J. (2016). Mexican American adolescents' emotional support to the family in response to parental stress. *Journal of Research on Adolescence, 26*(4), 658–672. <https://doi.org/10.1111/jora.12216>
- Tsai, K. M., Telzer, E. H., Gonzales, N. A., & Fuligni, A. J. (2013). Adolescents' daily assistance to the family in response to maternal need. *Journal of Marriage and Family, 75*(4), 964–980. <https://doi.org/10.1111/jomf.12035>
- Wentzel, K. R., Filisetti, L., & Looney, L. (2007). Adolescent prosocial behavior: The role of self-processes and contextual cues. *Child Development, 78*(3), 895–910. <https://doi.org/10.1111/j.1467-8624.2007.01039.x>
- Zarrett, N., & Eccles, J. (2006). The passage to adulthood: Challenges of late adolescence. *New Directions for Youth Development, 1*(111), 13–28. <https://doi.org/10.1002/yd.179>

Supporting Information

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix S1. Supplementary Material.