

Research Article

Friendships in Old Age: Daily Encounters and Emotional Well-Being

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Abstract

Objectives: Having friends in old age is linked to higher levels of happiness and life satisfaction. Yet, we know little about older adults' emotional experiences when they encounter friends throughout the day. This study examined whether older adults reported (a) more pleasantness, (b) fewer conversations about stressful experiences, and (c) better mood when they had contact with friends compared to when they had contact with other social partners or were alone throughout the day. We also examined whether these experiences varied by the friendship closeness.

Method: Adults aged 65+ ($n = 313$) from the *Daily Experiences and Well-being Study* provided background information and listed and described their close social partners. Participants then completed ecological momentary assessment (EMA) surveys every 3 hr for 5 to 6 days where they reported their encounters with social partners, rated the pleasantness and indicated whether they discussed stressful issues during these encounters, and rated positive and negative mood.

Results: Multilevel models revealed that encounters with friends were more pleasant and were associated with fewer discussions about stressful experiences compared to encounters with romantic partners or family members throughout the day. Encounters with friends were also associated with better mood, though this link only held for encounters with friends who were not considered close.

Discussion: Findings are discussed in terms of functionalist theory, socioemotional selectivity theory, relationship ambivalence, and the benefits of less close ties. This work facilitates the understanding of how daily contact with friends can promote older adults' emotional well-being.

Keywords: Close relationships, Daily experiences, Ecological momentary assessment, Friends

Friendships often serve as a source of connection and happiness in late life, partly because many of these relationships have endured for years (Buhl, 2009; Wright & Patterson, 2006). Indeed, friendships differ from other types of relationships because they are voluntarily chosen and can be disbanded without a formal process or even formal acknowledgment (Adams, Blieszner, & De Vries, 2000). Moreover, functionalist theory identifies specific functions that friends may serve to enhance older adults' lives in a way that other social part-

ners do not (Messeri, Silverstein, & Litwak, 1993; Uehara, 1994). Compared to other social partners, friends are better at providing companionship for leisure activities, developing and maintaining personal meaning and self-identity, and providing short-term help and emotional support (Fingerman, 2009; Litwin & Shiovitz-Ezra, 2011). However, we know little about older adults' experiences with friends throughout the day because prior studies focused on retrospective reports on the general quantity and quality of friendships in late life

(Chopik, 2017; Huxhold, Miche, & Schüz, 2014; for review see Piquart & Sörensen, 2000).

In this study, we examine the affective features of older adults' experiences with friends when compared with other types of social partners using an ecological momentary assessment (EMA) methodology. This methodology allows us to capture older adults' emotional experiences without relying on retrospective recall of relevant experiences (Charles et al., 2016).

Daily Experiences With Friends

Encounters with friends are common in older adulthood. On average, older adults report having contact with a friend at least once a week (Nicolaisen & Thorsen, 2017; Nguyen, Chatters, Taylor, & Mouzon, 2016). Indeed, the companionship that even casual friends provide is crucial for well-being (Rook, 2015). Higher levels of companionship buffer the effects of minor stressors on well-being and are more strongly associated with loneliness and relationship satisfaction than social support (Rook, 1987; Rook & Charles, 2017).

Pleasantness

Older adults' encounters with friends are usually pleasant. According to socioemotional selectivity theory, older adults tend to engage in behaviors that maximize pleasant experiences (Carstensen, 2006; Charles & Carstensen, 2010). Unlike family relationships which cannot be terminated easily, the voluntary nature of friendships allows older adults to dissolve unsatisfactory friendships from their networks (Blieszner & Adams, 1998; Blieszner & Roberto, 2004). Likewise, the social convoy model suggests some social partners may drop out due to choices or external circumstances throughout the life course. These network partners (e.g., friends) may either be replaced by new or existing members, or may not be replaced, causing the convoy to shrink in size (Antonucci, Ajrouch, & Birditt, 2014). As such, many enduring friendships in late life are likely among the strongest and most rewarding ties.

Stressful experiences

Social encounters can sometimes be a source of stress. However, research regarding stressful experiences with friends is mixed. Some studies find that older adults experience more tensions with non-family members (e.g., friends, neighbors, coworkers) than with family members (e.g., spouses, children; Birditt, Fingerman, & Almeida, 2005). Yet, retrospective studies that differentiate friends from coworkers or service providers show it is the latter two who cause aggravation (Fingerman, Hay, & Birditt, 2004; Milardo, 1989). Indeed, the similarities shared by friends (e.g., demographic characteristics and values; Blieszner & Adams, 1992; Flatt, Agimi, & Albert, 2012) may lead to fewer disagreements or conflicts with friends than with non-friends. Older adults may also experience fewer stressful experiences with friends than with their partners or family

members, but for other reasons. For example, contact with friends often involves leisure activities, whereas contact with romantic partners and family members may include household tasks or decisions (e.g., chores, financial planning) that are potentially stressful that could lead to conflicts. For these reasons, we expected that older adults would report greater pleasantness and fewer discussions about stressful experiences in their encounters with friends compared to their encounters with other social partners.

Mood

Contact with friends has been linked to older adults' better subjective well-being (e.g., happiness and life satisfaction; Fiori, Smith, & Antonucci, 2007; Piquart & Sörensen, 2000; Wrzus, Wagner, & Neyer, 2012). Relational regulation theory suggests that ordinary conversation, companionship, and fun are more closely linked to well-being than receiving support (Lakey & Orehek, 2011; Lakey, Vander Molen, Fles, & Andrews, 2016), indicating friends could be influential for older adults' well-being (despite family members being the primary source of support). In one of the earliest daily experience studies, Larson and his colleagues (1986) paged older adults at random times within every 2-hr block. They found that positive mood states were associated with the presence of friends. Although daily studies on friendships are sparse, we predicted that older adults would report better mood when they were with friends than when they were alone or with other social partners throughout the day.

Closeness of Friendships

We examined relationship closeness, and specifically whether close friends have a greater influence on older adults' emotional well-being than less close friends do. According to the social convoy model, close social partners are the most likely to provide support and affirmation, which have decisive influences on well-being (Antonucci et al., 2014). Similarly, studies have found that older adults who have close friends or feel close to their friends report better well-being than older adults who have only casual friends or feel less close to their friends or lack friends (Fiori et al., 2007; Litwin & Shiovitz-Ezra, 2011; Nguyen et al., 2016). As such, we predicted that older adults would report greater levels of pleasantness, fewer discussions about stressful experiences, and better mood when they had encounters with closer friends (i.e., friends in their social convoy; Antonucci et al., 2014) than when they had encounters with less close friends (i.e., friends who were not listed in social convoy).

Other Factors Associated With Encounters and Experiences With Friends

This study adjusted for additional factors that may be associated with daily experiences with friends among older adults. Older age (Shaw, Krause, Liang, & Bennett, 2007)

and poorer health (Ha, Kahng, & Choi, 2017) are associated with less frequent contact with friends. Women have more frequent contact with friends than men (de Jong Gierveld, 2003; Kalmijn, 2003), as do people with higher socioeconomic status (SES) relative to those with lower SES (Bianchi & Vohs, 2016). Further, African Americans and Hispanics are less involved in friendship networks than white Americans (Hedegard, 2017; Taylor, Taylor, & Chatters, 2016). We also adjusted for the proportion of friends each participant reported in the social convoy. Beyond participant factors, we also adjusted for in-person contact, given that face-to-face contact is associated with better emotional well-being (Teo et al., 2015; Van der Horst, & Coffé, 2012). Further, we considered the number of different types of activities in which participants engaged, referred to here as diverse activities. Prior studies have found that greater diversity of behaviors is associated with better mood (Fingerman, Huo, Charles, & Umberson, 2020; Lee et al., 2018).

The Current Study

The current study tested the following hypotheses. Compared to other encounters (i.e., romantic partners, family members, and other social partners) throughout the day, we expected that older adults would:

Hypothesis 1: evaluate encounters with friends as more pleasant.

Hypothesis 2: be less likely to discuss stressful experiences in their encounters with friends.

Hypothesis 3: report better mood when they had encounters with friends.

We also expected that the associations in H1–H3 vary by closeness.

Hypothesis 4: Compared to encounters with less close friends throughout the day, we expected older adults would evaluate their encounters with close friends as more pleasant, be less likely to discuss stressful experiences, and report better mood.

Methods

Participants and Procedures

The current study used data from the *Daily Experiences and Well-being Study* (DEWS) collected in 2016–2017. This study included 333 adults aged 65 and older who resided in the Greater Austin, Texas (including the urban, suburban, and rural areas). Inclusion criteria involved residing in the community and not working full-time for pay. Participants first completed a 2-hr initial interview at home or in a location of their choice. They then completed EMAs on their social experiences every 3 hr each day across 5 or 6 days using an Android device provided to them. They received \$50 for completing the initial

interview and another \$100 for completing the EMA. Of the 333 older adults who completed the initial interview, 313 participated in the EMA. Compared to the other 20 participants who were not part of the daily data collection, these 313 participants were less likely to self-identify as an ethnic or racial minority ($t = 2.70, p = .007$) but did not differ in other background characteristics. **Table 1**

Table 1. Descriptive Information for Participants' Characteristics and Daily Experiences

	Participants ($n = 313$)		
	<i>M</i>	<i>SD</i>	Range
Demographics characteristics			
Age	73.94	6.38	65–90
Education ^a	5.88	1.61	1–8
Self-rated health ^b	3.56	1.02	1–5
Number of friends in social convoy	2.10	2.30	1–10
% of friends in social convoy ^c	0.17	0.21	0–1
		Proportion	
Female		0.56	
Married ^d		0.59	
Ethnic or racial minority ^e		0.31	
Daily experiences			
Encounters with friends ^f	31	0.25	0–1
Encounters with romantic partners ^g	0.50	0.45	0–1
Encounters with family members ^h	0.45	0.31	0–1
Encounters with others ⁱ	0.36	0.22	0–1
Pleasantness ^j	4.61	0.43	1–5
Stressful experiences ^k	0.11	0.13	0–1
Positive mood ^l	3.44	0.71	1–5
Negative mood ^m	1.23	0.30	1–5

Notes. The range is the possible value range.

^aCoded as 1 (no formal education), 2 (elementary school), 3 (some high school), 4 (high school), 5 (some college/vocation or trade school), 6 (college graduate), 7 (post college but no additional degree), and 8 (advanced degree).

^bRated from 1 (poor), 2 (fair), 3 (good), 4 (very good) to 5 (excellent).

^cThe number of friends participants listed in the top 10 divided by the total number of social partners listed in all the social convoy circles.

^dCoded as 1 (married or cohabitated) and 0 (not married).

^eCoded as 1 (ethnic/racial minority) and 0 (non-Hispanic white).

^fThe proportion of assessments in which older adults had encounters with friends.

^gThe proportion of assessments in which older adults had encounters with romantic partners.

^hThe proportion of assessments in which older adults had encounters with family members.

ⁱThe proportion of assessments in which older adults had encounters with others.

^jAveraged rating of pleasantness of encounters, rated from 1 (unpleasant) to 5 (pleasant).

^kAveraged proportion of discussions of stressful experiences, coded as 1 (stressful) and 0 (not stressful).

^lAverage of four positive mood items (e.g., love, content) every 3 hr, rated from 1 (not at all) to 5 (a great deal).

^mAverage of five negative mood items (e.g., irritated, lonely, sad) every 3 hr, rated from 1 (not at all) to 5 (a great deal).

summarizes the 313 participants' demographic and daily experiences information.

Initial Interview Measures

Social convoy

In the initial interview, participants listed their social partners in three concentric convoy circles (Antonucci, 1986). Participants provided names of people they: (a) feel so close to that it is difficult to imagine life without them (i.e., innermost circle), (b) may not feel quite that close to, but who are still very important to them (i.e., middle circle), and (c) have not already mentioned but who are close enough and important enough in their lives that they should also be included in the circle (i.e., outermost circle). Social partners are predominantly spouses, children, siblings, and friends. To avoid fatigue, participants only answered additional questions for up to 10 of their closest social partners (Antonucci et al., 2014; Fiori et al., 2007). We generated a categorical variable to indicate relationship types, 1 (*friends*), 2 (*romantic partners*; e.g., spouses, romantic partners, cohabitators), 3 (*family members*; e.g., parents, children, siblings, grandchild; Fiori et al. 2007), and 4 (*other social partners*; e.g., acquaintances, other relatives, coworkers, neighbors, church members).

Covariates

Participants' age, gender coded as 1 (*male*) and 0 (*female*), ethnic/racial minority status recoded as 1 (*ethnic/racial minority*) and 0 (*non-Hispanic white*), health status self-reported on scale from 1 (*poor*) to 5 (*excellent*; Idler & Kasl, 1995), and education level coded as 1 (*no formal education*), 2 (*elementary school*), 3 (*some high school*), 4 (*high school*), 5 (*some college/vocation or trade school*), 6 (*college graduate*), 7 (*post college but no additional degree*) to 8 (*advanced degree*) were assessed. We generated a variable to indicate the proportion of friends in the social convoy. We did not include relationship status as a covariate due to the high correlation between relationship status and encounters with romantic partners ($r = .88, p < .001$), which may cause multicollinearity.

EMA Measures

Encounters with social partners

Every 3 hr, participants reported whether they had any social encounters with each of their 10 closest social partners listed in the convoy model. We had information about these social partners' relationships to the participants from the global interview. After completing this part of the survey, participants also indicated how many people they had encountered who were not already listed (i.e., non-convoy social partners) during the prior 3 hr. Then, participants answered additional questions on up to the six of these additional social encounters, including their relationship type (i.e., family member, friend, acquaintance, service provider,

stranger, and other). We treated the non-convoy family members in the category of family members, non-convoy friends as friends, and the remaining non-convoy social partners (i.e., acquaintance, service provider, stranger, other) as other social partners.

Closeness of friendships

The social convoy measure asked participants to list social partners who were important in their lives. We generated a variable to indicate whether the friend was listed in the convoy or reported as an additional social contact: 1 (*convoy friend*) and 0 (*non-convoy friend*).

Pleasantness of the encounter

For each social encounter, the participant reported in the prior 3 hr, a follow-up question asked "How pleasant was this interaction for you?" Participants rated each encounter from 1 (*unpleasant*) to 5 (*pleasant*).

Stressful experiences

In addition to the rating of pleasantness for the encounter, another follow-up question asked, "Did you discuss anything that might be considered stressful or unpleasant?" Participants answered 1 (*yes*) or 0 (*no*).

Mood

Participants rated their positive and negative mood during the prior 3 hr. They rated the extent to which four positive mood items (i.e., calm, love, content, proud) and five negative mood items (i.e., nervous/worried, irritated, bored, lonely, sad) described them on a scale from 1 (*not at all*) to 5 (*a great deal*; Fingerman, Kim, Birditt, & Zarit, 2016; Watson, Clark, & Tellegen, 1988). We calculated averages to generate a positive mood score ($\alpha = .69$) and a negative mood score ($\alpha = .72$).

Covariates

Participants also indicated how they encountered each of their social partners: in-person, via text, or phone. We generated a variable to indicate whether each encounter was an in-person contact 1 (*yes*) or 0 (*no*) for analyses at the encounter level (e.g., predictions of pleasantness and discussions about stressful experiences). For ratings of mood, we used the proportion of encounters that were in-person contact during each assessment. In addition, participants indicated whether they engaged in 14 sets of waking activities every 3 hr (e.g., exercise, watching TV, shopping/errands, volunteering). We generated a sum score to indicate the diversity of activities every 3 hr.

Analytic Strategy

To test the first two hypotheses: whether older adults' encounters with friends were more pleasant and less likely to discuss stressful experiences compared to encounters with other encounters, we estimated multilevel models to account for encounters with different social partners (*level 1*) being

nested within 3-hr assessment intervals (*level 2*), and within participants (*level 3*). We estimated multilevel linear models with SAS PROC MIXED for the continuous outcome (i.e., the rating of pleasantness) and multilevel logistic models with SAS PROC GLIMMIX for the binary outcome (i.e., discussed stressful experiences, *yes* or *no*; Guo & Zhao, 2000). The predictor, a categorical variable representing four types of social partners, was dummy coded such that *friend* was the referent group and *romantic partner*, *family member* and *another social partner* were entered as predictors (1 (*yes*) or 0 (*no*) for each) across the two models. The study focused on within-person effects (e.g., whether a person would rate their encounters with friends as more pleasant compared to encounters with other people (romantic partners, family members, and other social partners). We followed the recommended statistical procedures for examining within-person effects (Bolger & Laurenceau, 2013; Curran & Bauer, 2011) by including the between-person effects. That is, we included each participant's mean variables (e.g., proportion of encounters during the study period that were with friends) in the three-level models to adjust for possible between-person effects (e.g., whether participants whose social encounters were predominately friends during the study period generally rated their encounters more pleasant than participants whose social encounters were predominately family members or other social partners). The between-person centered variable was calculated by taking the proportion of encounters across the study that each participant had with friends (i.e., the person's mean) and subtracted the mean of all participants' proportions of encounters with friends (i.e., the grand mean). This same process was used to calculate between-person centered variables of romantic partner, family member, and another social partner. Before running the models, we grand-mean centered the covariates: age, level of education, health status, and proportion of friends; and effect-coded for gender, minority status, and in-person contact to make the intercepts more interpretable. To assess differences between these social partners' associations with the rating of pleasantness and discussions about stressful experiences, we tested all pairwise comparisons of the within-person effects with Tukey adjustments after running the models.

To test the next hypothesis pertaining to older adults' mood, we estimated two-level models with 3-hr assessment intervals (*level 1*) nested within participants (*level 2*) using SAS PROC MIXED. We treated older adults' positive and negative mood as continuous outcomes in two separate models. Participants could have encountered multiple types of social partners in the same 3-hr period. Thus, in these analyses, we entered variables representing whether the participant had any encounters with each type of social partner: friends 1 (*yes*) and 0 (*no*), romantic partners 1 (*yes*) and 0 (*no*), family members 1 (*yes*) and 0 (*no*), and other social partners 1 (*yes*) and 0 (*no*). These dichotomous variables represent any encounter with any person in that category (i.e., with any friend) rather than the number of social partners encountered. For two-level models, we were also interested

in the within-person effects (i.e., whether the participant reported better mood when he/she encountered friends during the assessment compared to when he/she did not encounter friends during the assessment). Similarly, we included each participant's mean variables in the two-level models (e.g., proportion of assessments during the study period that were with friends) to adjust for the between-person effects (i.e., whether participants who had more encounters with friends during the study period generally had better mood than participants who had fewer encounters with friends). Models examining mood adjusted for the same covariates in the previous models except that we adjusted for the proportion of encounters that occurred in person during each assessment and number of diverse activities in which participants engaged (both grand-mean centered). We conducted pairwise comparisons using *t*-tests to determine whether the coefficients for encounters with different types of social partners significantly differed from one another. That is, we asked whether links between certain encounters and mood were stronger than links involving other encounters.

We re-estimated the model for each of these outcomes by comparing convoy friends and non-convoy friends. In the analyses pertaining to pleasantness and discussion about stressful experiences, we selected encounters when participants reported encounters with friends and excluded the times when participants reported encounters with other types of social partners or no encounters at all. Therefore, the predictor was a dichotomous variable that represented whether that encounter with a friend was a social convoy friend 1 (*yes*) and 0 (*no*). We reran the analyses involving mood by entering: any encounters during the prior 3 hr with convoy friends 1 (*yes*) and 0 (*no*) and non-convoy friends 1 (*yes*) and 0 (*no*) as predictors in addition to any encounters with romantic partners, family members, and other social partners.

Results

The total sample of older adults ($n = 313$) listed an average of 2.10 ($SD = 2.30$) friends in their social convoy, representing 17% of their overall social convoy members. Older adults encountered friends in about one-third of their assessments (Table 1). More than 90% of older adults ($n = 286$) encountered at least one friend (i.e., friends who were listed in the social convoy as well as friends not listed in the social convoy) during the study period. Among all the encounters with friends, 32% of these encounters involved convoy friends and 68% of these encounters were with non-convoy friends.

Within-Person Differences in Friendship Experiences

Pleasantness of the encounters

We hypothesized that older adults evaluated encounters with friends as more pleasant compared to encounters with other social partners throughout the day. As expected, older

adults viewed their encounters with friends as more pleasant compared to encounters with romantic partners ($B = -0.05$, $p = .005$), family members ($B = -0.06$, $p < .001$), or other social partners ($B = -0.23$, $p < .001$; [Table 2](#)). [Supplementary Table 1](#) shows findings from pairwise comparisons of the other relationships using Tukey's adjustment.

Stressful experiences

We also predicted that older adults were less likely to discuss stressful experiences in their encounters with friends compared to their encounters with other social partners. As given in [Table 3](#), older adults were less likely to discuss stressful experiences when they encountered friends than when they encountered their romantic partners (odds ratio [OR] = 1.73, $p < .001$) or family members (OR = 1.21, $p = .04$). Yet, older adults were more likely to discuss stressful

experiences in their encounters with friends compared to encounters with social partners other than family members (OR = 0.75, $p = .003$). Pairwise comparisons of discussions of stressful experiences among other relationships using Tukey's adjustment are presented in [Supplementary Table 1](#).

Mood

We then explored how encounters with friends were associated with older adults' mood throughout the day. As given in [Table 4](#), encounters with friends ($B = 0.07$, $p < .001$) were associated with increased positive mood throughout the day. Pairwise comparisons using t -tests revealed that encounters with friends were more strongly associated with positive mood than encounters with other social partners

Table 2. Multilevel Linear Models Predicting Pleasantness of Encounters Throughout the Day From Encounters With Different Social Partners

Variable	<i>B</i>	<i>SE</i>
Fixed effects		
Intercept	4.69***	0.03
Within-person effects ^a (encounter-level)		
Friend	(Ref.)	(Ref.)
Romantic partner	-0.05**	0.02
Family member	-0.06***	0.02
Other social partner	-0.25***	0.02
Between-person effects ^b		
Friend	(Ref.)	(Ref.)
Romantic partner	-0.01	0.18
Family	-0.11	0.17
Other social partner	-0.25	0.20
Covariates		
Age ^c	0.00	0.00
Gender ^c	-0.04	0.06
Education ^c	-0.02	0.02
Health ^c	0.10***	0.03
Minority status ^c	0.06	0.06
% of friends in social convoy ^c	0.04	0.13
In-person contact ^d	0.09***	0.01
Random effects		
Intercept VAR (Level 2: Assessment)	0.17***	0.01
Intercept VAR (Level 3: Participant)	0.15***	0.01
Residual VAR	0.32***	0.00
-2 log-likelihood	34276.3	

Notes. Encounters $n = 17,486$ from 313 participants. Pleasantness of encounters was a continuous outcome 1 (*unpleasant*) to 5 (*pleasant*).

^aThe predictor was a categorical variable representing different social partners which was recoded as four dummy variables.

^bThe person mean variables representing the proportion of encounters across the study that each participant had encounters with different types of social partners.

^cParticipant-level covariates.

^dEncounter-level covariates.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. Multilevel Logistic Models Predicting Stressful Experiences Throughout the Day From Encounters With Different Social Partners

Variable	<i>B</i>	<i>SE</i>	<i>OR</i>
Fixed effects			
Intercept	-2.65***	0.08	
Within-person effects ^a (encounter-level)			
Friend	(Ref.)	(Ref.)	
Romantic partner	0.55***	0.10	1.73
Family member	0.19*	0.09	1.21
Other social partner	-0.28**	0.09	0.75
Between-person effects ^b			
Friend	(Ref.)	(Ref.)	
Romantic partner	-1.06	0.55	0.35
Family	-0.07	0.51	0.94
Other social partner	0.68	0.60	1.98
Covariates			
Age ^c	-0.03*	0.01	0.97
Gender ^c	-0.03	0.17	0.97
Education ^c	0.07	0.05	1.07
Health ^c	-0.28***	0.08	0.76
Minority status ^c	-0.67***	0.19	0.51
% of friends in social convoy ^c	0.22	0.39	1.24
In-person contact ^d	-0.56***	0.07	0.57
Random effects			
Intercept VAR (Level 2: Assessment)	1.25***	0.08	
Intercept VAR (Level 3: Participant)	1.04***	0.13	
-2 (pseudo) log-likelihood	90504.05		

Notes. Encounters $n = 17,486$ from 313 participants. Discussions of stressful experiences was a dichotomous outcome 1 (*stressful*) and 0 (*not stressful*).

^aThe predictor was a categorical variable representing different social partners which was recoded as four dummy variables.

^bThe person mean variables representing the proportion of encounters across the study that each participant had encounters with different types of social partners.

^cParticipant-level covariates.

^dEncounter-level covariates.

* $p < .05$. ** $p < .01$. *** $p < .001$.

($t = 0.08, p < .001$; Supplementary Table 2). Yet, we did not observe a significant association with negative mood ($B = -0.01, p = .19$; Table 4).

Closeness of friendships

We re-estimated all models and considered the differences between convoy friends and non-convoy friends. We found no significant differences between convoy friends and non-convoy friends on the rating of pleasantness or discussions of stressful experiences in their encounters.

With regard to mood, we observed interesting within-person effects. As given in Table 5, encounters with non-convoy friends were significantly associated with increased positive mood ($B = 0.08, p < .001$) and reduced negative mood ($B = -0.02, p = .02$), even after accounting for encounters with romantic partners, family members, and other social partners. *T*-tests comparing the effect sizes further revealed that encounters with non-convoy friends were more strongly associated with higher positive mood

($t = 0.07, p = .006$; Supplementary Table 3) than encounters with convoy friends; the *t*-tests for negative mood was not significant ($t = -0.03, p = .06$; Supplementary Table 3).

Between-Person Differences in Friendship Experiences

Our findings revealed that older adults who encountered friends more often during the study period were no different in their reported pleasantness, frequency of discussion of stressful experiences, or either positive or negative mood from participants who encountered friends less often (Tables 2–5). By adjusting for the between-person effects, we ensured the observed findings (i.e., participants reported more pleasantness or fewer discussions about stressful experiences, or were in better mood when they encountered friends) were not because participants had more total number of encounters with friends during the study period.

Table 4. Multilevel Linear Models Predicting Participants’ Mood Throughout the Day From Encounters With Different Social Partners

Variable	Positive mood		Negative mood	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Fixed effects				
Intercept	3.41***	0.05	1.21***	0.02
Within-person effects^a (encounter-level)				
Friend	0.07***	0.01	-0.01	0.01
Romantic partner	0.02	0.02	0.01	0.01
Family member	0.05***	0.01	0.02*	0.01
Other social partner	-0.01	0.01	0.01	0.01
Between-person effects^b				
Friend	0.05	0.19	0.01	0.08
Romantic partner	0.09	0.14	0.03	0.06
Family	0.08	0.15	0.15*	0.06
Other social partner	0.04	0.21	0.07	0.08
Covariates				
Age ^c	-0.01	0.01	0.00	0.00
Gender ^c	-0.06	0.09	0.06	0.04
Education ^c	-0.03	0.03	0.00	0.01
Health ^c	0.12**	0.04	-0.08***	0.02
Minority status ^c	0.09	0.11	-0.07	0.04
% of friends in social convoy ^c	0.15	0.22	0.04	0.09
% of in-person contact ^d	0.32	0.22	-0.17***	0.09
Diverse activity ^d	0.02***	0.00	0.00	0.00
Random effects				
Intercept VAR (Level 2: Participant)	0.47***	0.04	0.08***	0.01
Residual VAR	0.17***	0.00	0.06***	0.00
-2 log-likelihood	7572.4		1416.5	

Notes. Assessments $n = 6,262$ from 313 participants. Positive and negative mood were continuous outcomes, 1 (*not at all*) to 5 (*a great deal*).

^aThe predictor was binary variables representing any encounters with four different types of social partners.

^bThe person mean variables representing the proportion of assessments across study that each participant had encounters with different types of social partners.

^cParticipant-level covariates.

^dAssessment-level covariates.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5. Multilevel Linear Models Predicting Participants' Mood Throughout the Day From Closeness of Friendships

Variable	Positive mood		Negative mood	
	B	SE	B	SE
Fixed effects				
Intercept	3.41***	0.05	1.21***	0.02
Within-person effects ^a (assessment-level)				
Social convoy friend	0.02	0.02	0.01	0.01
Non social convoy friend	0.08***	0.01	-0.02*	0.01
Romantic partner	0.02	0.02	0.01	0.01
Family member	0.05***	0.01	0.02*	0.01
Other social partner	-0.02	0.01	0.01	0.01
Between-person effects ^b				
Social convoy friend	-0.12	0.25	-0.10	0.10
Non social convoy friend	0.14	0.23	0.06	0.09
Romantic partner	0.09	0.14	0.03	0.06
Family member	0.09	0.15	0.15*	0.06
Other social partner	0.03	0.21	0.07	0.09
Covariates				
Age ^c	-0.01	0.01	0.00	0.00
Gender ^c	-0.06	0.09	0.06	0.04
Education ^c	-0.03	0.03	0.00	0.01
Health ^c	0.12**	0.04	-0.08***	0.02
Minority status ^c	0.09	0.11	-0.07	0.04
% of friends in social convoy ^c	0.26	0.26	0.09	0.10
% of in-person contact ^d	0.32	0.22	-0.17	0.09
Diverse activity ^d	0.02***	0.00	0.00	0.00
Random effects				
Intercept VAR (Level 2: Participant)	0.47***	0.04	0.08***	0.01
Residual VAR	0.17***	0.00	0.06***	0.00
-2 log-likelihood	7570.3		1420.8	

Notes. Assessments $n = 6,262$ from 313 participants. Positive and negative mood were continuous outcomes, 1 (*not at all*) to 5 (*a great deal*).

^aThe predictor was binary variables representing any encounters with four different types of social partners.

^bThe person mean variables representing the proportion of assessments across study that each participant had encounters with different types of social partners.

^cParticipant-level covariates.

^dAssessment-level covariates.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Post Hoc Tests

We also asked whether the pleasantness and discussions about stressful experiences during the encounters mediated the association between encounters with friends and positive mood. We estimated two-level mediation models using *MPlus* with 3-hr assessment intervals (*level 1*) nested within participants (*level 2*) adjusting for the covariates used in prior models testing mood. We generated mean variables to indicate the rating of pleasantness and discussions of stressful experiences during the 3-hr assessment. Findings revealed that encounters with friends had a significant indirect effect on positive mood via the averaged rating of pleasantness ($B = 0.04$, $p = .002$) but there was no significant indirect effect via averaged discussions of stressful experiences ($B = 0.01$, $p = .159$; not shown in tables).

Daily experiences with friends also may vary depending on relationship status, with older adults who lack a

romantic partner, perhaps experiencing more frequent encounters with friends and stronger emotional reactions to these encounters. We explored whether relationship status moderated the associations between encounters with friends and pleasantness of the encounter, discussions of stressful experiences, or mood. We did not include encounters with romantic partners given the high correlation between relationship status and encounters with romantic partners (59% of the sample was married or cohabitated). Findings revealed a significant interaction between relationship status and encounters with friends for pleasantness ($B = -0.06$, $p = .03$; [Supplementary Table 4](#)) and positive mood ($B = -0.09$, $p < .001$; [Supplementary Table 5](#)). Simple slopes analyses revealed that older adults who were not married/cohabitated ($B = 0.16$, $p < .001$) reported significantly greater pleasantness when they encountered friends than did married/cohabitated older adults ($B = 0.11$, $p < .001$; see [Supplementary Figure 1](#)) and more positive mood

(not married/cohabitated: $B = 0.12$, $p < .001$; married/cohabitated: $B = 0.03$, $p = .09$; see [Supplementary Figure 2](#)). We did not observe significant interaction effects of encounters with friends \times relationship status on discussions of stressful experiences with friends ($B = -0.16$, $p = .31$) or negative mood ($B = 0.02$, $p = .29$; [Supplementary Table 5](#)).

Discussion

Friendships are strongly associated with older adults' well-being. Yet, prior research findings are predominantly based on retrospective reports between the number or quality of friendships and well-being ([Chopik, 2017](#); [Huxhold et al., 2014](#); [Pinquart & Sörensen, 2000](#)). This study examined how daily contact with friends shapes daily experiences. Using EMAs, we found that contact with friends was common in older adults' everyday lives and played a stronger role in older adults' daily emotional well-being than did other relationships.

Encounters With Friends and Daily Experiences

Pleasantness

As hypothesized, older adults reported greater pleasantness during their encounters with friends than during encounters with other types of social partners. Socioemotional selectivity theory predicts that close social partners (e.g., family members, friends) among older adults generate more positive emotional experiences than do acquaintances ([Charles & Carstensen, 2010](#)). Our current study parallels with these studies and finds that encounters with friends are the most pleasant, even beyond the encounters with romantic partners or family members. This is possible because older adults spend more time with their romantic partners or family members; they may habituate to encounters with these people. An encounter with a friend, on the other hand, may represent a positive change in daily activities.

Stressful experiences

Our findings also revealed that older adults were less likely to discuss stressful experiences in their encounters with friends than in their encounters with romantic partners or family members. These findings are consistent with the relational ambivalence literature ([Fingerman et al., 2004](#); [Krause & Rook, 2003](#); [Sorkin & Rook, 2004](#)), which suggests older adults are less likely to have negative exchanges with friends than with family members. However, it is worth noting that discussing stressful experiences does not necessarily indicate the encounter per se was stressful. Individuals may discuss stressful issues with friends as a way to garner support. Nevertheless, we were also surprised to find that encounters with other social partners (who were not family or friends) were even less likely to discuss stressful experiences than encounters with friends, romantic partners, or family members. This lower rate of

discussing stressful experiences may reflect a lack of investment and commitment in these distal social partners, such that older adults do not bother to raise annoying issues or generate conflicts with these distal social partners ([Fingerman, 2009](#); [Spitzberg, & Cupach, 2013](#)).

Mood

Consistent with prior retrospective studies ([Pinquart & Sörensen, 2000](#); [Wrzus et al., 2012](#)), we found that encounters with friends and family members were associated with increased positive mood throughout the day. Encounters with friends were more strongly associated with positive mood than encounters with other social partners, but did not differ significantly from romantic partners or family members. It appears to be the case that both encounters with friends and family members play an equally important role in enhancing positive mood among older adults ([Fiori et al., 2007](#); [Huxhold et al., 2014](#)). However, we did not observe a reduction in negative mood when older adults encountered friends. This might be due to a lack of variability in negative mood among older adults ([Kessler & Staudinger, 2009](#)).

Closeness of Friendships and Daily Experiences

As noted earlier, socioemotional selectivity theory suggests older adults tend to retain their closest social partners and engage more often with these partners (e.g., close family and close friends; [Charles & Carstensen, 2010](#)). Likewise, older adults are expected to engage more often with close friends than less close friends. Surprisingly, our findings revealed the opposite. Our finding provides evidence that older adults maintain some "dormant" friends who are viewed as important but are not frequently encountered.

The social convoy literature documents the influential role of social convoy partners on one's well-being ([Antonucci et al., 2014](#); [Antonucci, Fiori, Birditt, & Jackey, 2010](#)). Yet, our findings revealed no association between closeness of friendships and momentary ratings of pleasantness or discussions of stressful experiences in their encounters with friends. However, interestingly, although encounters with non-convoy friends were associated with increased positive mood and reduced negative mood, we found that encounters with convoy friends were not. Our findings added support to the literature on the importance of peripheral ties, which suggests less close ties are beneficial in terms of social integration, diverse activities, and novelty ([Fingerman, 2009](#); [Fingerman et al., 2020](#)). Further, relational regulation theory posits that global perceptions of support are not based on the actual instances of support, but on other pleasant exchanges in the relationship. In this case, although less close friends are unlikely sources of support, encounters with these friends are associated with better mood because these encounters may entail fun and companionship ([Lakey & Orehek, 2011](#); [Lakey et al., 2016](#); [Rook, 2015](#)). Indeed, encounters with non-convoy

friends may involve novel experiences compared to more routine activities with closer friends and family. Several studies have documented that novelty is associated with happiness (Buchanan & Bardi, 2010; Churchyard & Buchanan, 2017). Our findings parallel those findings by revealing that contact with less close friends (who may be sources of novelty or encourage novel behaviors) was associated with better mood in older populations.

Friendship Experiences and Relationship Status

Most research suggests that unmarried older adults have more friends on average (Mair, 2019) and are more likely to socialize and exchange help with friends compared to their married counterparts (Kalmijn, 2003; Sarkisian & Gerstel, 2016). Our findings extend this research by showing that older adults who were not married reported greater pleasantness and more positive mood when they encountered friends than married older adults. Thus, friends may constitute a key part of social networks for older adults who are widowed, divorced, or never married.

Limitations and Future Directions

Limitations of this study should be addressed in future research. The study was correlational, so causal relationships could not be determined. Researchers should examine potential mechanisms that explain associations between encounters with friends and emotional well-being. Future research could consider the content of the encounters (e.g., how participants spent time with their social partners, participants' work and volunteer status) to better understand observed associations. For example, individuals usually perform routine daily tasks with their family members (Litwin & Shiovitz-Ezra, 2011; Messeri et al., 1993) whereas friends often serve as companions for social activities (e.g., volunteering, recreation activities; Huxhold et al., 2014; Rook & Ituarte, 1999). Furthermore, this study did not isolate encounters with friends from the co-occurrence of other social encounters during the 3-hr period. It is possible that an unpleasant or pleasant experience with one social partner may affect the concurrent or subsequent social experience with another social partner.

The measures also did not examine participants' understanding of friendship. Some older adults may view their closest friends as family members (e.g., "fictive kin" or "logical kin" in contrast to biological kin; Rae, 1992). Moreover, older adults may feel close to friends who are not listed in the top 10 of their convoys. As such, future research should pay more attention to the complexity of this friendship variation. As noted earlier, older adults may have close friends that they rarely contact in daily lives but are crucial to their well-being. Future research should differentiate effects of friends who are rarely encountered from friends who are encountered on a daily basis. Lastly, research could also

examine friendship characteristics other than closeness, such as the gender and age of friends or relationship duration.

Together, findings suggest that friends play a unique role in older adults' emotional well-being, and they do so by increasing levels of positive experiences encountered in daily life. Moreover, this study explored the closeness of friendships and provided a window to understand the complexity of friendship.

Supplementary Material

Supplementary data is available at *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* online.

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Conflict of Interest

None reported.

Author Contributions

Y.T.N. conceptualized the article, conducted literature review, planned and executed analyses, and had primary responsibility in writing the manuscript. M.H. assisted in article conceptualization and rewrote drafts. M.E.G. and L.A.N. contributed in shaping the study and revising drafts. S.T.C. was a coinvestigator on the grant that funded the study and was involved in all phases of research design, data collection, and revision of drafts of the manuscript. K.L.F. was Principal Investigator on the grant that funded the study and was involved in all phases of research design, data collection; she also helped conceptualize this study and helped revise numerous drafts of the article.

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