Living Alone During COVID-19: Social Contact and Emotional Well-Being among Older Adults

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ABSTRACT

Objective: The COVID-19 outbreak and associated physical distancing measures altered the social world for most older adults, but people who live alone may have been disproportionately affected. The current study examined how living alone was associated with daily social contact and emotional well-being among older adults during the pandemic.

Method: Adults ($N = 226$) aged 69+ completed a brief survey assessing their living situation, social contact with different social partners (in person, by phone, electronically), and emotions during the morning, afternoon and evening the prior day.

Results: Older adults who live alone were less likely to see others in person or to receive or provide help. Living alone was associated with more positive emotions concurrent with in-person contact. In contrast, phone contact was associated with higher levels of negative affect among those living alone, but not among those who live with others. Older adults who live alone were more likely to have contact with friends (rather than family).

Discussion. Findings suggest older adults who live alone may be more reactive to social contact during the COVID-19 outbreak than older adults who reside with others. In-person contact may confer distinct benefits not available via telephone contact, suggesting that possible interventions during the pandemic may work best with safe forms of in-person contact, possibly with non-family members.

Keywords: COVID-19, stay at home order, social isolation

In spring 2020, to curtail the spread of COVID-19, public health initiatives encouraged limiting face-to-face contact, maintaining a distance of six feet from others, and remaining at home as much as possible. Older adults who live alone may have experienced greater isolation during the pandemic than older adults living with others (Armitage & Nellums, 2020). Approximately 34% of women and 21% of men aged 60+ in the U.S. live alone (Ausubel, 2020) and are at heightened risk factor of social isolation (Klinenberg, 2016).

Living with social partners, by definition, affords more in-person contact, and in-person contact may have advantages over other modalities of contact (e.g., telephone, text, social media). For example, a national study found that among older adults, in-person contact was associated with lower levels of depression, but this was not the case for telephone or electronic contact (Teo et al., 2015). Furthermore, nearly a third of older adults lack access to the internet (Armitage & Nellums, 2020; Fingerman et al., 2020; Hülür & Macdonald, 2020); and depend on in-person or phone contact.

The Current Study

The current study examines how daily positive and negative emotions vary based on whether people live alone during the pandemic. Analysis of Twitter feeds at the outset of the pandemic revealed increased mention of gratitude (e.g., for good health, job), though negative emotions were still heavily present (Lwin et al., 2020). In general, older adults seem to report less stress and negative emotion than younger adults during the pandemic (Birditt et al., 2020).

It is not clear whether social distancing practices influence levels of loneliness. A study conducted at the start of the pandemic in the U.S. found that older adults listed lack of social contact as their biggest challenge due to the pandemic (Heid et al., 2020). Another study, however, including a U.S. national longitudinal sample that was conducted prior to and during the early phases of the pandemic found that older adults living alone reported more loneliness than older adults living with others in February 2020, but no increase in loneliness during the stay-at-home orders (Luchetti et al., 2020). Likewise, a large study examined daily loneliness using an internet survey during the initial COVID outbreak in Germany, and found that older adults reported less loneliness than younger adults. Importantly, that study found no association between number of household members and loneliness, though it is not clear whether living alone might pose special risks in late life (Buecker et al., 2020). As such, it is worth considering the role of social contact among older adults who live alone.

Individuals who live alone must engage with social partners outside their household to see others in person. Married individuals most likely have in person contact with a spouse, but widowed, divorced, or never married individuals are more likely to live alone (Cudjoe et al., 2020). Those who live alone may seek contact with grown children, siblings, friends or others.

We included covariates that might shape these experiences, including race, gender, and education (Carr, 2019). Black and Hispanic adults are disproportionately affected by COVID 19 (Hooper et al., 2020), and are less likely to live alone than are Non-Hispanic White older adults (Cudjoe et al., 2020). Likewise, older adults in poorer health have higher risk of contracting Covid-19 (Cohen, 2020; Lian et al., 2020), and may avoid other people. We included feeling depressed in general, given associations between daily affect and mental health (Charles et al., 2013). In addition, social activity and negative affect may vary throughout the day, with social contact peaking in the afternoon among older adults (Tucker et al., 2012).

METHODS

Data collection occurred during May and June 2020. Participants ($N = 226$; $M_{age} = 77.28$ years, $SD = 6.23$) in the Austin area had previously participated in the Daily Experiences and Well–being Study (DEWS) in 2016. We used prior contact information or via social contacts they had provided at Wave 1 to recontact participants. We attempted to reach participants by phone, letter, or email (if email address was available). Loss of original participants reflected: lack of contact information ($n = 21$), deceased ($n = 13$), monolingual Spanish ($n = 8$), illness or crisis ($n = 6$), and cognitive impairment ($n = 4$). Response rate was 80% of eligible participants ($n = 226$ out of 281). Participants ($N = 226$) differed from the 2016 who did not participate ($n = 107$) with regard to being: younger ($t = -3.41$, $p < .001$), better educated ($t = 4.39$, $p < .001$), healthier ($t = 4.73$, $p < .001$), and less likely to be racial or ethnic minorities ($\chi^2 = 22.52$, $p < .001$). Participants received $15 gift cards for completing the study. To recruit a few remaining participants at the end of the study, we increased incentive to $30 with IRB permission.

Measures
Background Characteristics

Several demographic variables were gathered in Wave 1: age (+4 years = approximate current age); gender 1 (*male*); 0 (*female*); education 1 (*no formal education*) to 8 (*advanced degree*); and ethnic and racial identities 1 (*ethnic or racial minority*); 0 (*non-Hispanic White*). We did not include data from 2016 regarding sociability, daily experiences or well-being for two reasons: a) the four-year gap precludes understanding baseline well-being immediately prior to the COVID-19 outbreak, and b) methods of data collection were different at the two waves. In 2016, we collected reports of social contacts and well-being every 3 hours throughout the day. This was not possible during the pandemic, and we relied on survey methodology of morning, afternoon and evening the prior day; surveys were completed by phone, the internet, or paper and pencil.

In the current data collection, participants rated their physical health from 1 (*poor*) to 5 (*excellent*; Ware Jr. & Sherbourne, 1992). Marital status of nine participants had changed since 2016 (i.e., 8 widowed, 1 divorced). Being married was highly correlated with living with others ($r = .78$, $p < .001$); we did not examine marital status separately. Ten participants indicated their living situation had changed since the pandemic started. Current living situation was coded 1 (*alone*) and 0 (*with other*).

COVID-19 Experiences

Participants reported COVID experiences: symptoms (e.g., fever, shortness of breath), loved one had COVID-19, financial circumstances worse, and whether they socially distanced 1 (*yes*) or 0 (*no*). Participants also indicated changes in contact with a) family members and b) friends, neighbors, acquaintances since the pandemic started.

Daily Experiences

Research using the Day Reconstruction Method (DRM) has shown adults accurately report experiences from the prior day (Kahneman et al., 2004); Oerlemans et al., 2011). To prevent fatigue, we asked questions about 3 broad periods: morning (waking until noon), afternoon (noon until 5 pm) and evening (5 pm until bedtime).

Social Engagement

For each time period, participants indicated whether they engaged with social partners: a) in person, b) via phone, and c) electronically, and if so, with whom. They also indicated 1 (*yes*) or 0 (*no*) whether they provided or received help from another person.

Emotions

Participants rated 5 emotions 1 (*not at all*) to 5 (*a great deal*) at each time period (morning, afternoon, evening) generating a subscale for positive emotions: gratitude and contentment ($\alpha = .71$) and for negative emotions: loneliness, sadness, stress ($\alpha = .70$).

RESULTS
Descriptive and Bivariate Statistics

Eighty-one older adults lived alone, and 145 lived with spouse/romantic partner only ($n = 95$), grown child only ($n = 21$) or spouse and others (e.g., grown child, grandchild or other; $n = 29$). Only 5% of the sample had experienced symptoms of COVID. Socially, 83% self-isolated, but 95% reported they had necessary support during the outbreak. Most participants reported contact with family was about the same or more frequent, but living alone was associated with increased contact with friends and acquaintances $\chi^2 (2) = 4.19$, $p < .05$ (Table 1).

Bivariate comparisons revealed that older adults who live alone were less likely to see social partners in person, to provide help throughout the day, less likely to receive help in the afternoon or evening, or communicate electronically in the afternoon (Supplementary Table 1).

Residential Status, Social Encounters, and Emotional Experiences

We asked whether social encounters throughout the day exert a greater effect on emotional well-being among older adults who live alone. Regressions included main effects and interaction terms for living arrangement × mode of contact at each period of the day as well as covariates. Findings were similar at different times of day; for parsimony we present significant models using afternoon data (Supplementary Table 1).

The interaction terms for in-person contact and telephone contact were significant. When participants reported in-person encounters, mean positive affect was similar regardless of living status. Simple slopes analyses revealed individuals who live alone experienced more positive emotions (contentment, gratitude) when they saw someone in person than people who did not have in-person contact.

Phone contact was not associated with positive affect. Individuals who live alone experienced more negative emotions (loneliness, sadness, and stress) when they talked to someone on the phone compared to: a) people who lived alone but did not talk with others on the phone or b) who live with others regardless of phone contact (See Figure 1).

We repeated analyses for each type of emotion separately (contentment, gratitude, loneliness, sadness and stress). Findings were significant for contentment and gratitude, indicating that positive emotions broadly may increase after in person contact. But only loneliness was significant among negative emotions (Supplementary Table 3).

We also considered the types of social partners with whom older adults had contact (Supplementary Table 2). Unsurprisingly, older adults who lived with others were more likely to see a spouse in person (.04 live alone, .78 lives with others, $t = -15.79$, $p < .001$). But those who lived alone were more likely to see a friend (.31 live alone, .08 with others, $t = 3.27$, $p < .01$) or service provider (.21 live alone, .07 with others, $t = 2.18$, $p < .05$). Likewise, we observed differences in telephone contact. Older adults who lived alone were *less* likely to talk with a

sibling (.04 live alone, .15 with others, $t = -2.47$, $p <. 05$), but more likely to talk with a friend (.70 live alone, .40 with others, $t = 3.68$, $p <. 01$).

DISCUSSION

Social distancing may have placed older adults who live alone at increased risk for lower levels of well-being (Brooke & Jackson, 2020; Klinenberg, 2016). This study assessed this risk in a community-dwelling sample in daily life. Consistent with national data, two-thirds of participants resided with other people, usually with spouses and grown children (Ausubel, 2020), and 5% had experienced symptoms of COVID-19. Compared to those living with others, older adults living alone reported less in-person contact, but contrary to expectations they did not report more time on the phone or electronic communication.

Overall, findings suggest that in-person contact is important for older adults' positive emotional well-being, particularly for those who live alone. In addition, physical presence appears to confer key benefits (Teo et al., 2015), as telephone contact did not increase positive affect. In fact, telephone contact among those who lived alone was associated with higher levels of negative affect, and specifically with loneliness. Talking to others by phone may remind people of their feelings of being alone during the pandemic. It is not clear whether this effect was evident prior to the COVID-19 outbreak, when phone contact might have supplemented (rather than substituted) for in person contact. Nor do we know whether electronic contact (e.g., videoconferencing) might mitigate effects of social isolation, and many older adults continue to lack access or ability to use internet communications (Xie at al., 2020).

Notably, friends play an important role for older adults who live alone. These older adults reported increased contact with friends since the start of the outbreak, and had more in-person and more telephone contact with friends than did older adults who live with others. We had anticipated that older adults who live alone (e.g., widows, divorced) might also have increased contact with grown children or siblings, but those who lived with others talked more often with their siblings. This study is consistent with prior research that has found contact with friends improves daily well-being (Ng et al., 2020). Here, that was true for in person contact among older adults who live alone.

These findings, however intriguing, have limitations. We did not compare how the same person experienced being alone, with others, and in telephone communication across a broader timespan. Moreover, we could not compare experiences before and after the COVID-19 outbreak. A national study reported that adults who live alone were lonelier than those who live with others before the U.S. pandemic, but did not increase in loneliness during the pandemic (Luchetti, 2020). Those findings suggest these patterns may not be unique to social distancing.

Despite these limitations, findings reinforce the importance of social partners for daily well-being. Further, the study suggests that in-person contact may confer unique benefits to positive emotional well-being and technologically-mediated communication cannot replace the physical presence of others.

Table 1

Background Characteristics and Social Experiences of Older Adults Who Live Alone or with Others

	Lives alone (n = 81)		Lives with others (n = 145)		
	Mean/ Proportion	*SD*	*Mean/ Proportion*	*SD*	Significant Differences
Age	78.27	6.18	76.73	6.21	
Education [a]	6.19	1.52	6.10	1.38	
Health [b]	3.48	0.98	3.41	0.96	
Life satisfaction [c]	7.33	1.88	7.25	2.03	
Loneliness past week [d]	1.43	0.54	1.31	0.41	
Depression past week [e]	1.33	0.57	1.24	0.46	
Female	.77	–	.43	–	$\chi^2(1) = 23.95$***
Married	.04	–	.85	–	$\chi^2(1) = 136.02$***
Racial/ethnic minority	.17	–	.28	–	
Change in social contacts since March					
With family					
Less than before	.05	–	.08	–	
Same as before	.63	–	.62	–	
More than before	.32	–	.30	–	
With friends, acquaintances neighbors					$\chi^2(2) = 4.19$*
Less than before	.28	–	.38	–	
Same as before	.44	–	.46	–	
More than before	.27	–	.16	–	
Social Experiences in the afternoon					
In person contact	.62	–	.90	–	$t(218) = -4.70$***
Contact by phone	.67	–	.67	–	
Electronic communication	.51	–	.65	–	$t(220) = -2.12$*
Provided help	.11	–	.27	–	$t(222) = -3.21$**
Received help	.14	–	.29	–	$t(220) = -2.86$**
Emotions in the afternoon					
Positive emotion subscale [f]	3.86	1.05	3.91	0.90	
Gratitude	3.96	1.21	3.92	1.09	
Contentment	3.77	1.13	3.90	0.98	
Negative emotion subscale [g]	1.49	0.63	1.38	0.63	
Loneliness	1.46	0.82	1.23	0.58	$t(220) = 2.17$*
Sadness	1.38	0.70	1.41	0.80	
Stress	1.59	0.92	1.51	0.83	

Note. [a] 1 (*no formal education*), 2 (*elementary school*), 3 (*some high school*), 4 (*high school*), 5 (*some college/vocational school*), 6 (*college graduate*), 7 (*post college*), and 8 (*advanced degree*). [b] 1 (*poor*) to 5 (*excellent*). [c] 1 (*not at all satisfied*) to 10 (*completely satisfied*). [d] Average of three items rated 1 (*hardly ever*), 2 (*some of the time*), and 3 (*often*). [e] 1 (*hardly ever*), 2 (*some of the time*), and 3 (*often*) [f] Average of gratitude and contentment,1 (*not at all*) to 5 (*a great deal*). [g] Average of loneliness, sadness, and stress, 1 (*not at all*) to 5 (*a great deal*).
*$p < .05$, ** $p < .01$, *** $p < .001$.

Table 2

Linear Regressions Predicting Emotion Subscales in the Afternoon from Participants' Living Situation: Social Contacts as Moderators

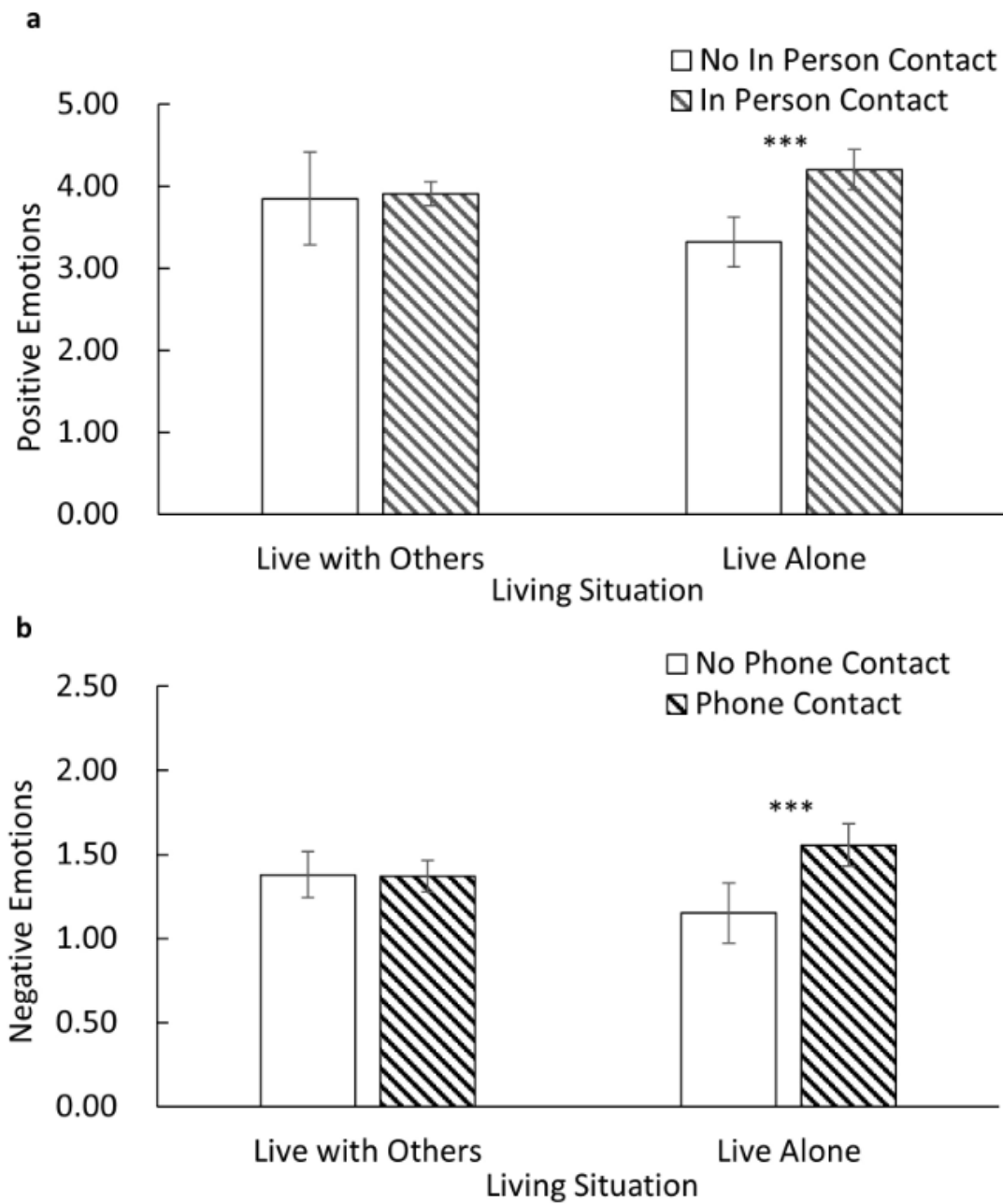| Parameter	Positive emotions [a]		Negative emotions [b]	
	B	SE	B	SE
Intercept	2.01*	0.82	1.11*	0.44
Live alone [c]	-0.53	0.28	-0.23	0.12
In person contact [d]	0.06	0.25	–	–
Live alone [c] × In person contact [d]	0.82**	0.31	–	–
Phone contact [d]	–	–	-0.01	0.08
Live alone [c] × Phone contact [d]	–	–	0.41**	0.14
Covariates				
Gender [e]	-0.23	0.12	-0.09	0.07
Age	0.01	0.01	-0.00	0.01
Education [f]	0.09	0.04	-0.02	0.02
Minority status [g]	0.59***	0.15	-0.05	0.08
Health [h]	0.25***	0.07	-0.00	0.04
Depression [i]	-0.35**	0.12	0.64***	0.06
F	8.37***		15.48***	
Adjusted R^2	.26		.38	

Note. Participant reports on contact and afternoon emotions $n = 226$.
[a] Average of gratitude and contentment, 1(*not at all*) to 5 (*a great deal*). [b] Average of loneliness, sadness, and stress, 1(*not at all*) to 5 (*a great deal*). [c] Live alone 1 (*yes*) 0 (*no*). [d] Any contact 1 (*yes*) 0 (*no*). [e] 1 (*male*) 0 (*female*). [f] 1 (*no formal education*) to 8 (*advanced degree*). [g] 1 (*racial or ethnic minority*) 0 (*non-Hispanic White*). [h] 1 (*poor*), 2 (*fair*), 3 (*good*), 4 (*very good*), 5 (*excellent*). [i] 1 (*hardly ever*), 2 (*some of the time*), and 3 (*often*).
*$p < .05$. **$p < .01$. ***$p < .001$.

Figure 1

Living Situation and Social Contact Predicting Positive and Negative Emotions in the Afternoon

Supplementary Table 1

Participants' Reported Social Experiences and Emotions at Different Times of Day

	Lives alone (*n* = 81)		Lives with others (*n* = 145)		
	Mean/ Proportion	*SD*	*Mean/ Proportion*	*SD*	*t*
Morning					
In person encounter [a]	.57	–	.94	–	-6.32***
Contact by phone [a]	.58	–	.55	–	0.44
Electronic communication [a]	.62	–	.63	–	-0.20
Provided help [a]	.10	–	.23	–	-2.65**
Received help [a]	.15	–	.24	–	-1.68
Positive emotions [b]	3.81	1.00	3.81	0.92	-0.02
Negative emotions [c]	1.52	0.65	1.39	0.54	1.48
Afternoon					
In person encounter [a]	.62	–	.90	–	-4.70***
Contact by phone [a]	.67	–	.67	–	-0.05
Electronic communication [a]	.51	–	.65	–	-2.12*
Provided help [a]	.11	–	.27	–	-3.21**
Received help [a]	.14	–	.29	–	-2.86**
Positive emotions [b]	3.86	1.05	3.91	0.90	-0.32
Negative emotions [c]	1.49	0.63	1.38	0.63	1.18
Evening					
In person encounter [a]	.46	–	.91	–	-7.43***
Contact by phone [a]	.50	–	.44	–	0.76
Electronic communication [a]	.40	–	.47	–	-1.06
Provided help [a]	.09	–	.23	–	-3.10**
Received help [a]	.10	–	.31	–	-4.07***
Positive emotions [b]	3.76	1.06	3.93	0.90	-1.23
Negative emotions [c]	1.46	0.63	1.40	0.63	0.72

Note. [a] 1(*yes*), 0 (*no*). [b] Average score of gratitude and contentment, 1 (*not at all*) to 5 (*a great deal*). [c] Average score of loneliness, sadness, and stress, 1 (*not at all*) to 5 (*a great deal*).
**p* < .05. ***p* < .01. ****p* < .001.

Supplementary Table 2

Types of Social Partners with Whom Participants Had In Person or Phone Contact in the Afternoon

	Live alone (n = 81)	Live with others (n = 145)	t
In person contact			
Spouse	.04	.78	-15.79***
Grown children	.21	.29	-1.13
Grandchildren	.13	.12	0.14
Sibling	.00	.01	-0.61
Friend	.31	.08	3.27**
Neighbor	.29	.16	1.72
Service provider	.21	.07	2.18*
Others	.29	.24	0.67
Phone contact			
Spouse	.02	.04	-0.77
Grown children	.23	.30	-0.99
Grandchildren	.06	.03	0.71
Sibling	.04	.15	-2.47*
Friend	.70	.40	3.68**
Neighbor	.06	.03	0.71
Service provider	.02	.08	-1.69
Others	.19	.18	0.09

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

Supplementary Table 3

Significant Linear Regressions Predicting Individual Emotions in the Afternoon from Participants' Living Situation: Social Encounters as Moderators

	Gratitude [a] Living alone × in person contact		Contentment [a] Living alone × in person contact		Loneliness [a] Living alone × phone contact	
Parameter	B	SE	B	SE	B	SE
Intercept	1.96	1.03	2.00*	0.90	0.64	0.52
Live alone [b]	-0.43	0.31	-0.64*	0.31	-0.12	0.14
In person contact [c]	0.22	0.31	-0.09	0.27	–	–
Live alone [b] × In person contact [c]	0.80*	0.39	0.85**	0.34	–	–
Phone contact [c]	–	–	–	–	-0.15	0.10
Live alone [b] × Phone contact [c]	–	–	–	–	0.41*	0.16
Covariates						
Gender [d]	-0.37*	0.16	-0.07	0.14	-0.06	0.08
Age	0.01	0.01	0.01	0.01	0.00	0.01
Education [e]	0.10	0.06	0.08	0.05	-0.04	0.03
Minority status [f]	0.71***	0.18	0.47**	0.16	0.01	0.09
Health [g]	0.21**	0.08	0.29***	0.07	0.01	0.04
Depression [h]	-0.19	0.15	-0.52***	0.13	0.62***	0.07
F	5.60***		7.91***		10.88**	
Adjusted R^2	.16		.22		.29	

Note. [a] Rated 1(*not at all*) to 5 (*a great deal*). [b] Live alone 1 (*yes*) 0 (*no*). [c] Any contact 1 (*yes*) 0 (*no*). [d] 1 (*male*) 0 (*female*). [e] 1 (*no formal education*) to 8 (*advanced degree*). [f] 1 (*racial or ethnic minority*) 0 (*non-Hispanic White*). [g] 1 (*poor*), 2 (*fair*), 3 (*good*), 4 (*very good*), 5 (*excellent*). [h] 1 (*hardly ever*), 2 (*some of the time*), and 3 (*often*).
*$p < .05$. **$p < .01$. ***$p < .001$.

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