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Staying connected during stay-at-home: Communication with family and friends and its association with well-being

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Abstract

COVID-19 and the resulting stay-at-home orders issued to reduce the spread of the virus created a novel social situation in which people could not spend in-person time with their family and friends. Thus, emerging technologies like video calling and other forms of mediated communication like voice calling and text messaging became important resources for people to stay in touch. The purpose of this study was three-fold. First, we wanted to test whether people would use more mediated communication (video calls, voice calls, text messaging) to stay in touch during the stay-at-home order. Second, we wanted to see if increased mediated communication would be positively associated with well-being. Finally, we explored whether mediated communication was related to age. To answer these questions, we surveyed 2090 participants who answered questions online about how their use of video calls, voice calls, and text messaging and their well-being had changed since the stay-at-home order. Our results show that people increased their use of mediated communication, particularly video calling; and increases in mediated communication with close others, particularly friends, was related to higher levels of well-being. Finally, we found that age was related only to the use of video calling; younger people tended to use more video calling. These findings support the compensatory theory of technology use, that people use technologically mediated communication to maintain contact with their close friends and family when in-person contact is not possible, and that this form of contact, when in-person interaction is unavailable, is associated with positive outcomes.

KEYWORDS

age, close relationships, COVID-19, emotions, mediated communication, social isolation, text messages, video calls, voice calls, well-being

1 | INTRODUCTION

The COVID-19 pandemic has led to extreme changes in daily life due to the need to avoid physical contact with other human beings in order to prevent the spread of the virus. Governments around the world made the difficult decision to order their populations to isolate in their homes and avoid going out to see other people. These extreme restrictions led to a loss of in-person contact with family or friends who did not live in the same residence. We know that humans are social beings, are hardwired to crave contact with others, and indeed feel unfulfilled without it (Baumeister & Leary, 1995; Ryan & Deci, 2017).

Even more troubling in the context of COVID-19 stay-at-home orders is the fact that it was a period of extreme stress and one main coping mechanism for dealing with stress is receiving social support from others (Cohen & Wills, 1985). Fortunately, technology provided multiple avenues for staying connected during the stay-at-home order. Individuals with a mobile phone and an Internet connection or

cellular data could use video calls, telephone calls, and text-based messaging in the form of texts, emails, or Instant Messages via different applications (WhatsApp, Facebook Messenger, etc.) to contact family and friends.

The question in the current study was threefold: First, would individuals increase their usage of these technologies to maintain contact with family and friends when they could not see them in-person? Second, would using these avenues to stay in touch be beneficial for their psychological well-being? Third, would age be associated with using different types of mediated communication? We hope that answers to these questions will shed light on how humans creatively combat the social isolation created by COVID-19.

1.1 | Stimulation, displacement, or compensation?

In the early 2000s research on communication technologies centered on resolving the question of whether online communication stimulated (i.e., increased) or displaced (i.e., decreased) in-person contact with others (Valkenburg & Peter, 2007). In general, these studies tended to show that greater amounts of online communication were associated with greater in-person contact. However, one flaw in this comparison between stimulation versus displacement in cross-sectional studies or even short longitudinal studies, is that they do not take into account the changing societal context that has accompanied increases in communication technology use. Sociological and psychological studies show that people are spending less time in the physical company of others across the lifespan than they did previously. For example, in adolescence, relatively recent concerns about safety have meant that American adolescents are allowed less freedom to see friends in person (boyd, 2014). Concerning adults, authors have also noted that internal migration in the U.S. is frequent, and people no longer live their entire lives in the same town, making frequent in-person communication impossible (Molloy, Smith, & Wozniak, 2011). Even if or when people settle in a location, there seems to be decreased investment in democratic life, including decreased in-person contact with others, such as in bowling leagues (Putnam, 2000). Finally, the lack of multigenerational living in the United States has also led to a larger percentage of elderly people feeling isolated and lonely (Cohen-Mansfield, Hazan, Lerman, & Shalom, 2016). Taken together, this research shows that people were already spending less in-person time with others before COVID-19 caused stay-at-home orders to be issued.

Some research suggests that computer-mediated communication has become a way to compensate for this lack of in-person communication. For example, in a recent daily diary study, researchers found that adolescents were spending more time communicating online with friends on days they did not see them in person (Manago, Brown, Lawley, & Anderson, 2019). This finding suggests that teens are substituting computer-mediated communication for in-person communication when it is not possible to hang out with friends in person. Additionally, young adults attending university have been found to use computer-mediated communication to stay in touch with friends

from high school when seeing them frequently in-person is not possible (Brown & Michinov, 2017; Yang & Brown, 2013). Furthermore, Chinese international students use technology to stay in touch with both family and friends when they move to the U.S. and visiting home is not feasible (Cemalcilar, Falbo, & Stapleton, 2005; Kline & Liu, 2005). Adults also use technology to stay in touch with their close ties when in-person contact is not possible. For example, immigrants report maintaining family relationships in their countries of origin through technology (Chen & Choi, 2011). Finally, older adults who may be unable to get out to see family and friends, use technology such as video and voice chat to stay in touch (Xie, 2008; Zamir, Hennessy, Taylor, & Jones, 2018).

The current context provides us with the opportunity to observe whether people will increase their mediated communication to maintain contact with family and friends when a governmental stay-at-home order almost completely prevents in-person contact. We hypothesized that a large portion of the population would engage in more mediated communication than they did before the stay-at-home orders were issued as a way to compensate for decreased in-person contact. Because women engage in more mediated communication than men (Kimbrough, Guadagno, Muscanell, & Dill, 2013), we have explored this issue separately for each gender, as well as for the sample as a whole.

We acknowledge, however, that certain aspects of this study are exploratory and therefore make no specific predictions about the types of mediated communication that individuals may prefer to use, or whether there will be differences in the amounts of mediated communication used with family versus friends. We will however investigate these differences in order to explore people's communication preferences when in-person contact is not possible.

1.2 | Computer-mediated communication with close ties: Association with well-being

People need close bonds with family and friends to help maintain their happiness and self-esteem (Baumeister & Leary, 1995). Close bonds are maintained through communication (Hartup & Stevens, 1999; Segrin & Flora, 2005). Typically, elements of communication that are key to developing emotional closeness, such as self-disclosure, emotion sharing, and offering social support, have been studied in contexts where people are in the same physical space. Close ties may be especially important in the current crisis as individuals may need extra emotional and instrumental social support during this stressful period (Taylor et al., 2020; WHO, 2020); but, due to the stay-at-home order, individuals can only access social support through technological means. Fortunately, some research suggests that online communication can provide social support and is associated with positive well-being.

The positive effects of computer-mediated communication on well-being have been demonstrated across the lifespan. Starting in adolescence, teens who use computer-mediated communication to fulfill their relational needs (Ang, Talib, Tan, Tan, & Yaacob, 2015) and

improve friendship quality (Valkenburg & Peter, 2007) tend to have greater satisfaction with life. Young adults at university who engaged in more self-disclosure through online communication had higher satisfaction with life (Schiffrin, Edelman, Falkenstern, & Stewart, 2010). In a random community sample of adults aged 18–70, researchers found that using more communication modalities, such as in-person conversations, phone calls, video calls, texting, and email, with family and friends was associated with greater well-being (Chan, 2015). Finally, in a qualitative study of older adults who used chat rooms and online voice calls to stay in touch with friends, researchers found that they felt less lonely and received greater social support (Xie, 2008). Thus, we hypothesized that individuals who use more mediated communication with friends and family during the stay-at-home orders would experience greater satisfaction with life, more positive emotions, and fewer negative emotions. We made no specific predictions about whether communication with friends or family would be more beneficial to well-being, but planned to test them in the same model to see if they are equally beneficial for well-being.

1.3 | Current study

In order to answer our research questions, we recruited participants from two U.S. states: California and Rhode Island. In both states, residents had lived under a stay-at-home order for 34 days when the survey began; in both states; residents were still under stay-at-home orders 7 days later when the survey ended. We used an online survey to collect data on individuals' use of video calls, phone calls, and text messages to stay in touch with family and friends. We also measured shifts in satisfaction with life, positive emotions, and negative emotions during COVID-19 as measures of well-being. Our hypotheses and questions fell into three areas:

1. We hypothesized that individuals would use more mediated communication with both family and friends during the stay-at-home order than they did before the order. We explored whether this predicted increase would take place in all media types: phone calls, video calls, and text messages or would be concentrated in the new, emerging media of video and text. We also explored whether individuals would tend to be consistent across media types, such that increased use would take place in all types of communication, or whether individuals would tend to be selective, increasing their use of one particular communication medium, but not others.
2. We hypothesized that greater use of mediated communication with family and friends during the stay-at-home order would be associated with greater well-being. We also explored whether communicating with family or friends would have a greater connection to well-being.
3. We explored age effects: Would older adults increase their use of the phone calls, an older technology? Would younger adults increase their use of video and text-based communication, newer technologies?

2 | METHOD

2.1 | Participants

We recruited 2092 participants (M_{age} = 59.15, SD_{age} = 13.56) composed of 476 men, 1,583 women, 29 participants who self-identified as other genders, and 4 with unreported gender. One reason for this gender imbalance is that we recruited participants via Facebook and a higher percentage of American women use Facebook (83%), than American men (75%) (Greenwood, Perrin, & Duggan, 2016).

Participants were recruited from two states in the U.S., California (n = 1,137) and Rhode Island (n = 955). They were recruited using Facebook advertisements with links to the survey.

Our aim was to control for the time after the stay-at-home order was issued; and since these orders were issued by state, we recruited from each state individually. Participants had been under stay-at-home orders a little more than a month (34 days) when the survey began; it was available for a week in each state. We hoped that this amount of time would have allowed participants to settle into their new patterns of living during the stay-at-home order and to have developed new patterns of communication. In California, data collection took place from April 22 to April 29, 2020. In Rhode Island data collection took place from May 1 through May 8, 2020. Ninety-two percent of participants reported complying with the stay-at-home order and those who respected the order were at home for an average of 41.87 days (SD = 13.13) at the time of the survey. Our sample was mainly composed of European Americans (80.4%) with small percentages of LatinX (2.2%), African American (1.1%), Asian American (1.8%), Native American (1%), and Pacific Islander (0.3%) participants. 11.5% identified as "other;" 1.7% did not respond.

2.2 | Procedure

Participants were asked to participate in a study about how their lives had changed since the coronavirus outbreak and the stay-at-home order. If participants, clicked on the link, they were directed to Qualtrics, presented with further information about the study, and asked for informed consent to participate. The survey instrument included questions on the types of communication people use to stay in touch with family and friends during the stay-at-home order and questions about their emotions and satisfaction with life during the stay-at-home order. Finally, participants were asked demographic questions. This study was given ethical approval by the IRB at UCLA. All participants gave informed consent before taking part in the current research project.

3 | MEASURES

3.1 | Communication with family and friends

There were six mediated communication questions, three concerning communication with family and three concerning communication with

friends. Participants first read the prompt, "The following questions are about how the type of communication you now use with your (family/friends) living outside of your household has changed since the stay-at-home order." Participants were then asked if the amount of time they spend communicating with them via phone calls, video calls, and textual messages, had changed. For example, "Phone calls have become…" Possible answer choices were *less frequent, no change, more frequent*. We coded the response *less frequent* as −1, *no change* as 0, and *more frequent* as +1. For each participant, answers on the phone call, video call, and textual message items were summed to create a composite variable for family and friends separately. Scores could range from −3 (decrease in all three media) to +3 (increase in all three media). Positive scores indicate an increase since coronavirus and stay-at-home; negative scores indicate a decrease. Because plus and minus signs were used in calculating shifts, these scores indicate net change. For example, a decrease in phone communication (−1), along with an increase in video calls (+1) and texting (+1) would sum to +1. Means for the sample show that mediated communication with family (M = 1.49, SD = 1.32) and mediated communication with friends (M = 1.24, SD = 1.37) were above zero which indicates a net increase.

3.2 | Satisfaction with life

Satisfaction with life (SWL) was measured with one item, "Compared with before coronavirus, my life since the stay-at-home order is…" Response options were *more satisfying, equally satisfying, less satisfying*. More satisfying was coded as +1, equally satisfying as 0, and less satisfying as −1. Single item measures of SWL are commonly used in the literature and have been shown to be equally reliable and as valid as measures with more items (Cheung & Lucas, 2014).

3.3 | Positive and negative emotions

Participants were presented with the following emotion-relevant questions. For each emotion, they were asked to compare how they felt before coronavirus with how they were now feeling during the time of coronavirus and the stay-at-home order:

Compared with before coronavirus, is your life since "stay at home" (Check all that apply)

i. *Calmer*.
ii. *More anxiety-provoking*.
iii. *More depressing*.
iv. *More lonely*.

Compared with before coronavirus, I have become (check all that apply)

i. *More peaceful*.
ii. *More content*.

iii. *More frazzled and distracted*.

In these two emotion lists, there were three positive emotions (calm, peaceful, content) and four negative emotions (anxious, depressed, lonely, and frazzled/distracted).

The positive-emotion score consisted of the number of positive emotions out of three for which a participant reported an increase since coronavirus; hence, the possible range of individual scores was zero to three. The mean number of positive emotions for which the sample reported an increase was 0.75 (SD = 01.05). This mean signifies that, on average, three-quarters of the total sample reported experiencing a net increase in one positive emotion each during coronavirus.

The negative emotion score consisted of the number of negative emotions out of four for which a participant reported an increase since coronavirus; hence, the possible range of individual scores was zero to four. The mean number of negative emotions for which the total sample reported an increase was 1.03 (SD = 0.95). This mean signifies that, on average, sample participants reported experiencing a net increase in about one negative emotion each during coronavirus.

3.4 | Demographics

We asked participants to report several demographic variables including age, gender, and ethnicity. We also asked them to report if they had been adhering to the stay-at-home order in their state and if so, for how many days they had been at home.

3.5 | Data analysis

Due to the large sample size in our study, we have chosen to set alpha at a conservative .001 level. To examine differences in mediated communication before and during the pandemic, we use one-sample *t* tests and test the significance of change against zero (no change). To examine associations between usage of video calls, phone calls, and textual messages, we use chi-square tests. In order to examine differences between mediated communication with friends and family, we conduct a paired-samples *t* test. To examine the relationship between mediated communication and age we use Pearson correlations. For all of these statistics, we also report effect sizes. To examine the association between mediated communication and the well-being variables, we use the composite communication variables to predict well-being indicators with multiple regression analyses.

4 | RESULTS

4.1 | Communication changes during stay-at-home order

Seventy-nine percent of people reported increasing at least one form of mediated communication with family; 76% reported increasing at least

one form of mediated communication with friends. Both men and women showed the same pattern: 69.6% of men and 83.2% of women increased at least one form of mediated communication with family; 64% of men and 79.6% women increased at least one form of mediated communication with friends. Chi-square tests indicated that more women than men increased communication with family (χ^2 [1] = 42.733, $p < .001$) and with friends (χ^2 [1] = 48.338. $p < .001$); but effect sizes for these gender differences were small (family: $\Phi = .14$; friends: $\Phi = .15$)

We ran one-sample t tests for each of the six communication items with 0, no change, as the test value. We found that all types of communication with both family and friends increased significantly during the stay home order. Phone use with friends was the type of communication that increased the least. For both friends and family, textual communication increased the most compared with the other types of communication. Effect sizes for all tests were large (Cohen, 1998). t test values, effect sizes, and p values are reported in Table 1. We carried out the same statistical analyses separately for men and women. The pattern of results was the same for both genders: with both family and friends, mediated communication in all modalities had increased for both men and women, $p < .001$.

We were also interested in knowing whether people who increased one form of computer mediated communication would also increase other forms of mediated communication. To examine this question, we ran two three-dimensional chi-square tests examining the relationship between phone calls, video calls, and textual communication. One test examined this issue with respect to communicating with family; the other test examined this issue with respect to communicating with friends. For both family and friends, the chi-square values were highly significant (family: $\chi^2(4) = 656.109$, $p < .001$; friends: $\chi^2(4) = 757.298$, $p < .001$). Effect sizes were medium (family: $\Phi = .56$; friends: $\Phi = .60$.)

The significant chi-square values indicated consistency in response to stay-at-home across communication types. An examination of the italicized figures in Table 2 shows that people who increased one type of mediated communication with family members also tended to increase the other types as well. Similarly, people who decreased one type of mediated communication also tended to decrease the other types; and people who did not change their use of one type of mediated communication tended to not change their use of other types. We found a similar pattern for mediated communication with friends. This pattern is demonstrated in the -italicized figures in Table 3.

4.2 | Mediated communication and well-being

To explore the relationship between well-being and communication we conducted Pearson's correlations on shifts in the three well-being variables (SWL, positive emotions, and negative emotions) and shifts in the composite communication variables for family and friends (combining all three types of communication: phone, text, and video calls). The bivariate Pearson's correlations reported in Table 4 show that increased communication with both family and friends is positively correlated with increased life satisfaction and augmented positive emotions during coronavirus. There is no correlation between negative emotional shift and communication with family or friends. In order to examine whether increased mediated communication with family or friends was more important for well-being, we ran two regressions on the indicators of well-being that were significantly correlated with communication: increased satisfaction with life (SWL) and increased positive emotions experienced during the stay-at-home order. The predictors were the composite variables for communication with family and with friends.

Concerning satisfaction with life during the stay-at-home order, we found that model fit with the two predictors was significant, F (2,1966) = 13.959, $p < .001$. Including shifts in mediated communication with friends and with family in the model explained 1.4% of the variance in changing satisfaction with life. Examining the individual predictors, we found that an increase in mediated communication with family did not significantly predict increased satisfaction with life, but an increase in mediated communication with friends was positively associated with increased satisfaction with life, $\beta = .104$, $t = 3.713$, $p < .001$. For changes in positive emotion experienced during the stay-at-home order, we found a similar pattern. Model fit with the two predictors was significant, $F(2,2005) = 21.592$, $p < .001$. The mediated communication with family and friends explained 2.1% of the variance in positive emotion change during the pandemic. Only an increase in mediated communication with friends was a significant predictor in the equation, $\beta = .122$, $t = 4.401$, $p < .001$. In summary, increased levels of mediated communication with friends during the

TABLE 1 One-sample t tests on mean net change in the different types of mediated communication for family and friends

	t-value	df	Mean	SD	Cohen's D
Family					
Video calling	41.533	2058	0.511	0.559	0.914
Phone	30.691	2062	0.429	0.634	0.677
Text	44.337	2061	0.551	0.564	0.977
Friends					
Video calling	32.919	2066	0.419	0.579	0.724
Phone	22.136	2068	0.306	0.629	0.486
Text	39.969	2072	0.517	0.589	0.878

Note: For all t tests, $p < .001$.

TABLE 2 Cross-tab chart of mediated communication with family

	Phone calls	Video calls		
		Less	No change	More
Less texting	Less	*28*	10	6
	No change	3	9	1
	More	1	2	13
No change texting	Less	5	13	14
	No change	3	*371*	137
	More	1	91	134
More texting	Less	17	15	53
	No change	2	145	174
	More	4	214	*570*

Note: Numbers in bold are the participants who reported less of all mediated communication types, no change in all mediated communication types, or more of all mediated communication types.

TABLE 3 Cross-tab chart of mediated communication with friends

	Phone calls	Video calls		
		Less	No change	More
Less texting	Less	*51*	9	7
	No change	0	13	6
	More	1	2	10
No change texting	Less	7	21	9
	No change	6	*451*	145
	More	0	75	76
More texting	Less	17	20	46
	No change	3	209	216
	More	10	200	*438*

Note: Numbers in bold are the participants who reported less of all mediated communication types, no change in all mediated communication types, or more of all mediated communication types.

TABLE 4 Pearson correlations between mediated communication and well-being variables

	1	2	3	4
1 MC with family	–			
2 MC with friends	.601*	–		
3 SWL	.080*	.118*	–	
4 positive emotions	.106*	.142*	.529*	–
5 negative emotions	.030	−.028	−.435*	−.486*

Abbreviations: MC, mediated communication; SWL, satisfaction with life.
*$p < .001$.

stay-at-home order were associated with increases in life satisfaction and increases in positive emotions during the pandemic. Negative emotional shifts were not associated with changes in mediated communication with family or friends.

4.3 | Age and shifts in mediated communication during stay-at-home

We tested the relationship between age and the use of different communication media with friends and family, using Pearson's correlations. As expected, age was negatively associated with the use of video calls for communicating with both family ($r = −.115$, $p < .001$) and friends ($r = −.118$, $p < .001$). This finding suggests that the younger participants were, the more frequently they tended to increase their use of video calls to stay in touch during the stay-at-home orders; however, effect size is small. Contrary to our prediction that older participants would augment their use of voice calls during coronavirus and stay-at-home more than younger participants, age was not associated with shifts in using traditional voice calls to stay in touch with family and friends during stay-at-home. Changes in text messaging with friends and family were also not significantly correlated with age, indicating that people of all ages changed their use of texting in similar ways during the stay-at-home order.

5 | DISCUSSION

Our study surveyed a large sample of participants from two different U.S. states a little over a month into the stay-at-home order. We found that voice calls, video calls, and text-based messages increased with friends and family during the stay-at-home order. The pattern held for both genders, although it was slightly stronger for women. We also found that participants who increased one form of mediated communication tended to increase their use of the other forms of mediated communication. Additionally, we found that an increase in mediated communication with both family and friends was beneficial for well-being, but that an increase in mediated communication with friends was the more important factor. Interestingly, we found that while younger participants increased their use of video calls more than older ones, there was no association between age and voice calls or text messages.

5.1 | Increased use of mediated communication for relationship maintenance

We found that most of our participants (92%) were respecting the stay-at-home order which meant that they could not have in-person contact with family and friends outside of household members. Fortunately, many people adapted to this situation by increasing their technology usage. Indeed, our results showed that people increased their use of voice and video calls and text-based messages, although for both family and friends phone calls increased the least. Perhaps this is because if one has the time and capability to make a phone call on a mobile phone, they could also use a video call. Video calls may be preferred because they offer richer cues. Indeed, video calls are the closest form of communication to in-person conversations because many of the elements of in-person communication such as body language

and facial expressions are present in video calls. Furthermore, video calls have been found to promote more bonding between friends than voice calls or text messages (Sherman, Michikyan, & Greenfield, 2013).

Interestingly, although video calls may be a preferred method of communication when in-person conversations are not possible, people still increased their use of voice calls and text-based messages. Indeed, we found that people who increased one form of mediated communication were also likely to also increase their use of other forms of mediated communication. This finding is an example of media multiplexity theory which suggests that people who are emotionally close tend to use multiple communication channels for staying in touch with one another (Haythornthwaite, 2005). For example, friends might text to organize a lunch together, interact in-person during the lunch, and post pictures of their lunch on social media and comment on them later. Thus, since we asked specifically about close relationships, it is perhaps unsurprising that people tended to use multiple forms of mediated communication to stay in touch.

Our findings also provide novel evidence for the compensatory hypothesis of mediated communication use: that individuals use mediated communication as a substitute when in-person interaction is not possible. The novelty of our study is that it is a natural experiment where a large proportion of the population was restricted from seeing their family and friends in-person. Under this condition, people increased their use of technology in order to stay in touch with their close ties and this had important implications for well-being. Further study needs to be conducted to examine the compensatory hypothesis, but some evidence already exists that when people cannot see each other in person due to immigration (Chen & Choi, 2011), study abroad (Cemalcilar et al., 2005; Kline & Liu, 2005), or parental restrictions on movement (Manago et al., 2019) they adopt mediated communication as an important tool for staying in touch. One way to test the hypothesis, would be to look for reductions in mediated communication once the COVID-19 crisis has subsided and people can move about freely and interact in person with friends and family.

5.2 | Mediated communication and well-being

Overall, we found that an increase in mediated communication was positively related to increases in two indicators of well-being: satisfaction with life and positive emotions. This finding mirrors work in the offline communications literature showing that having numerous social contacts, more social capital, and more social interactions contribute to well-being and happiness (Cacioppo, Hawkley, & Thisted, 2010; Diener & Seligman, 2002; Rodríguez-Pose & Von Berlepsch, 2014). Research on computer-mediated communication conducted outside of the pandemic also tends to show positive effects of computer-mediated communication with friends and family (Manago et al., 2019; Shen et al., 2017; Valkenburg & Peter, 2007). Our results are also supported by another research project conducted in the U.S. during COVID-19 showing that feelings of relatedness were positively associated with well-being and lower levels of stress (Cantarero, Tilburg, & Smoktunowicz, 2020); however, these

researchers only asked about perceptions of relatedness, not the methods of communication people were using to stay in touch with others. Our study is novel in its large sample size from two U.S. states and measurement of use of mediated communication with friends and family rather than global measures of relatedness.

Interestingly we found no relationship of changes in mediated communication with shifts in negative emotions. Shifts in mediated communication were not associated with increases or decreases in negative emotions. There are several possible explanations for this. One is that negative emotions may promote seeking out social support (Barbee & Cunningham, 1995); but once this social support is obtained, then negative emotions decrease (Burleson, 1990; Leatham & Duck, 1990). Thus, the relationship between increased negative emotions and mediated communication would be positive at the beginning of this cycle with more negative emotion leading to more mediated communication with the goal of obtaining social support. Once the support was obtained the association between mediated communication and negative emotions would be reversed, more mediated communication would be associated with decreases in negative emotion. Thus, we may have had participants at different stages in this process which made the effect average out overall. Another possible explanation is that negative emotions from the situation surrounding COVID-19 were so strongly tied to external factors (worries about economic and health insecurity) that social support provided by family or friends through mediated communication would not be able to alleviate these negative emotions. Interestingly a previous longitudinal study on disaster victims of the Mount St. Helens volcanic eruption found that social support 1 year after the disaster did not decrease distress felt by the victims 3 years after the event (Murphy, 1988). Thus, negative emotions tied to extreme, external, uncontrollable events, may not be responsive to the provision of social support, however, more study is required to examine specifically which types of negative emotion and under what conditions.

Increases in mediated communication with both friends and family were positively associated with increased well-being; however, increases in mediated communication with friends were more strongly related to increases in well-being than increases in mediated communication with family. There is some evidence that supports this finding in the literature. For example, a large, multicounty survey study showed that frequent in-person interactions with friends were more strongly positively correlated with well-being than in-person interaction with family (Helliwell & Putnam, 2004). Similarly, in a study on retirees, researchers found that, although family members provide the majority of social support for older adults, friendships have a stronger influence on well-being (Larson, Mannell, & Zuzanek, 1986). There may be several reasons why friends provide more effective social support and contribute more to well-being than family. First, as the adage goes, you can pick your friends but not your family. Thus, negative relationships with family may be maintained while unfulfilling friendships can be discontinued (Pinquart & Sörensen, 2000). Second, friendship interactions seem to be qualitatively different from family interactions, with friends providing an escape from discussions of daily needs and positive feedback that family members may not

provide (Larson et al., 1986). Finally, some research suggests that support from family may be more stable over time and therefore have less impact in times of stress whereas support from friends may increase during periods of stress (Dahlem, Zimet, & Walker, 1991; Zimet, Dahlem, Zimet, & Farley, 1988). Governments as well as mental health practitioners may want to consider promoting more online communication between friends as a way for individuals to maintain their psychological well-being during periods of social or physical isolation.

5.3 | Age and mediated communication

Younger age was associated with increased video calling during the stay-at-home order. Phone calls did not have any relationship with age. Additionally, texting was not associated with age. One reason that text messaging and age may not be related is because texting is an accessible form of communication to older adults. While video calling may require learning new skills and also may be difficult for hearing impaired older individuals (Zamir et al., 2018), text messaging, whether via a computer or phone, is more accessible. For older adults who are visually impaired, they can enlarge text to make it easier to read and for those who are hearing impaired, reading text may be easier than communicating via video calls or phone calls. Furthermore, many seniors still do not use smartphones which can facilitate video calls, but more of them do have home Internet access to send text messages via a computer (Anderson & Perrin, 2017). Thus, different types of mediated communication may be preferred by different age groups due to their accessibility.

5.4 | Limitations and future directions

One limitation of our study is that the effect sizes on well-being variables that we found were small. In other words, increases in mediated communication with friends and family only explained a small amount of the observed variability in shifts in satisfaction with life and in positive emotions. However, any improvement in people's lives and emotions during a period of confinement due to COVID-19 or any other reason, should be considered important, particularly when the behaviors in this case (mediated communication) were so easy to engage with and relatively cost effective as long as people had an Internet connection or phone line. Government leaders should consider promoting greater amounts of mediated communication, during periods when in-person contact is not possible, to help their citizens maintain their psychological well-being.

A further line of study may interest industry leaders. The current study focused only on individual well-being, but our results may be extended to work contexts. Future studies could examine whether increases in mediated communication with co-workers during home working can increase satisfaction with work and productivity. These studies could also address which types of mediated communication are most effective for different work tasks.

6 | CONCLUSION

The current study shows how people have adapted to social isolation due to stay-at-home orders issued to combat the COVID-19 outbreak. It shows that people compensate for a lack of in-person contact by using emerging technologies like video calls and other forms of mediated communication. Furthermore, our study shows that increased mediated communication was associated with increases in subjective well-being even when people were,physically, socially isolated. This finding demonstrates the importance of technologically mediated communication during periods of crisis as a way to promote well-being through social connection.

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